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
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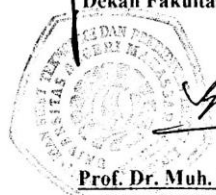
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DAFTAR ISI

NO	JUDUL JURNAL	PENULIS	PENERBIT	TAHUN
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Career Maturity of Senior Secondary Students in Relation to Their Self Concept

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Abstract

In the present investigation an attempt has been made to reveal the relationship of career maturity and self concept among senior secondary school students. The sample consisted of 200 students of senior secondary level drawn from CBSE affiliated govt. and private schools of Ambala. The result of the study revealed that students have high self concept but below average career maturity and that there is no relationship between career maturity and self concept.

Introduction

The construct of career maturity consists of readiness, attitude and competency to cope effectively with the career development tasks. The assumption can be made that a career mature person is more capable of making an appropriate and realistic career choice and decision. Career mature individuals have the ability to identify specific occupational preferences and to implement activities in order to achieve their goals. The concept of career maturity was defined as the place reached on the continuum of vocational development from exploration to decline (Super 1955). Career maturity is thus the degree which one has reached in cognitive, emotional and other psychological factors whereby one acquires the capacity of making realistic and mature career choices.

Career maturity refers to the individual's degree of maturity to choose, prepare and plan for vocations. Career maturity has come to be used as a prerequisite to the ability to make occupational based on the level of vocational job individual. Better and successful performance in a particular field of work leads to better social economic and emotional self.

Although educational and vocational choices are made by an individual but they are certainly influenced by many social and environmental factors which include socio-economic status of the family, home and family environment, sex, age, rural and urban background Psychological factors which may include intelligence, personality, achievement, motivation, interest, aptitude, self-concept, academic achievement etc. Thus, career selection is not an exclusively intellectual process in which various possibilities are sorted out in a logical manner. Instead, decisions are based on the interaction of career maturity with various social and psychological factors.

An insight into the possible factors underlying career maturity would suggest the guidelines for planning various activities for the students. It may also help the teachers, parents and guidance workers for developing desirable attitudes in children. Keeping in mind the determinant and predictor variables of career maturity, the present study is an endeavour to understand career maturity of senior secondary students in relation to self

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Significance of the Study

Adolescence is a period when the children experience stress and strain on account of career and occupational choices they have to make. They need proper guidance to enable them to make career choices. The present study has significance in the new system of education where students have a variety of courses to choose from. It is important for teacher and the counselor to know if their students have achieved the desired level of career maturity and a positive Self concept to survive in the world of cut throat competition.

The study will provide useful information about Career maturity and Self concept of Students studying in senior secondary schools.

Selection of a Stream at senior secondary stage is a very crucial decision. The decision of the child is influenced by the parents who may sometimes try to fulfill their unfulfilled ambitions precariously through their children. Also common trends prevailing in school circle affect the career choice. The students who score more than 60% marks opt for science and commerce even if they do not have innate abilities to study the above said courses. If they fail in the competitive entrance tests they face frustration and develop complexes. So it is very important to help them select the stream for which they are fit, keeping in view the two cardinal principles of Career maturity and Self concept. Hence, the investigator tried to study relationship between Career maturity of senior secondary school students in relation to their Self concept. CM research shows conflicting result for gender also, some studies finding higher levels in male, other in females (Naidoo, 1998). The present study was conducted to find out real situation about Career maturity and Self concept of boys and girls.

Objectives of the Study

1. To find the Career maturity of senior secondary school students.
2. To reveal the Self concept of senior secondary school students.
3. To find the relationship between Career maturity and elf concept of senior secondary school students.

Hypotheses

1. Students will exhibit an average level of Career maturity and Self concept.
maturity of senior secondary school students.

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2. There exists a significant gender difference in Self concept of senior secondary school students.
3. There exists a significant relationship between Career maturity and Self concept of senior secondary school students.

Sample

A sample of 200 Senior Secondary School Students was taken from different schools located in different areas of Ambala.

Tools Used

In the present study the following tools were used for collection of data by the investigators.

- Career maturity Inventory Adapted by Dr. (Mrs.) Nirmala Gupta (1989).
- Self concept Inventory by Raj Kumar Saraswat (1992).

Results and Discussion

Hypothesis I

Students will exhibit an average level of Career maturity and Self concept.

For testing this hypothesis mean, S.D. of Career maturity and Self concept of 100 boys and 100 girls were calculated. From mean scores obtained it is clear that the students exhibited above average level in the Self concept but boys were below average in all variables of Career maturity viz career choice attitude, self appraisal, Occupational Information, Goal Setting, Planning and Problem Solving. The girls achieved an average level in the variable of Career maturity choice attitude scale and planning but were found to be below average in other sub variables of competence.

The results obtained in the present study are not supported by Badoni (2006) who found the high School students of Chandigarh achieved average level in all variables of Career maturity and scored below average in Self concept.

So we conclude that since the students achieved above average level on the variable of Self concept and below average level in all sub-variables of Career maturity hypothesis I is not accepted in the present sample of Study.

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Table 1
Mean, S.D. S.K. & K.U. for sample of boys (N=100) in case of Career maturity and Self concept

Variables	Mean	SD	SK	KU	KU
CCA	28.54	5.904	-.78	2.50	Below Average
SA	4.95	2.217	.359	-.385	Below Average
OI	5.87	3.15	-.077	-1.29	Below Average
GS	4.49	2.65	.094	-.892	Below Average
PL	3.90	2.68	.626	-.023	Below Average
PS	2.50	1.65	.567	-.106	Below Average
SC	179.39	18.119	.282	.054	Below Average

Table 2
Mean, S.D. S.K. & K.U. for sample of Girls (N=100) in case of Career maturity and Self concept

Variables	Mean	SD	SK	KU	KU
CCA	28.95	5.71	-.421	2.19	Average
SA	5.20	2.53	.112	-.956	Low
OI	7.23	3.47	-.141	-1.159	Below Average
GS	6.10	2.83	-.252	-.559	Below Average
PL	5.17	2.94	.103	-1.14	Average

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PS	2.43	1.29	.58	-.271	Low
SC	176.08	15.155	-.26	-.355	Above Average

Hypothesis II

There exists a significant gender difference in Career maturity of senior secondary school students.

For comparing boys and girls on the variable of Career maturity, 't' test was employed. The value of 't' in case of career choice attitude was -.49; for self appraisal -.729 and for problem solving .33 is found to be insignificant. Whereas in the other sub-variables of Career maturity viz Occupational Information $t = 2.778$, Goal Setting $t = 4.12$ and Planning $t = 3.188$, the difference between the two genders is significant favouring girls.

On the measure of occupational information, goal setting and planning the girls are perhaps more aware and realistic. The girls were found to have more information about jobs and occupations and thus appropriate to their capabilities.

The results obtained in the present study were partially in conformity with the studies that Career maturity proceeds differently in boys and girls (Aggarwal, 1981; Kaur, 1992; King, 1989; Kumar, 2000; Badoni, 2006; Sharma, P., 2006; Kumar, 2000) and Sharma (2006) in their study reported that girls are more mature career wise than boys. However (Kaur, 1992; Dhillon & Kaur, 2005) found no difference in Career maturity for gender.

Table 3
t- ratio and level of Significance

Variables	Boys (N=100)		Girls (N=100)		t-value	Remarks
	Mean	S.D.	Mean	S.D.		
CCA	28.54	5.904	28.95	5.713	-.499	Not Significant

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SA	4.95	2.217	5.20	2.5	-.799	Not Significant
OI	5.87	3.45	7.23	3.47	2.778**	Not Significant
GS	4.49	2.65	6.1	2.869	4.12**	Not Significant
PL	3.9	2.68	5.17	2.9	3.188**	Not Significant
PS	2.5	1.65	2.43	1.217	.333	Not Significant
SC	179.39	18.119	176.08	15.15	1.401	Not Significant

** Significant at 0.01 level

Hypothesis III

There exists a significant gender difference in Self concept of Senior Secondary School students.

For comparing boys and girls on the variable of Self concept maturity, mean, S.D. and t-test were employed. A glance at the table 3 shows that the mean of Self concept for boys is slightly more than that of girls which is 179.39 and 176.08 respectively.

From the result of S.D., it is clear that Self concept of girls is slightly more scattered than that of boys.

To study of the significance of difference between the Self concept of senior secondary boys and girls, t-test was employed and the value from table 3 is found to be insignificant i.e. 1.401.

The findings of the present study are in confirmation to the study conducted by Badoni (2006) and Kaur (1992) who found that no sex differences exist in the variable of Self concept. However Sharma, (2004) in her study of Self concept and adjustment problems of adolescents in relation to sex found female adolescents higher in social, educational, moral and intellectual aspects of Self concept.

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Hypothesis IV

There exists a significant relationship between Career maturity and Self concept of senior secondary school students.

For testing the hypothesis, correlation approach was enclosed. The correlation intensity of Career maturity in two areas of attitude and competence (Self appraisal, Occupational Information, Goal Setting, Planning and Problem Solving) and Self concept was computed by Pearson's Product Moment method for 200 students of senior secondary level. A glance at the tables 4

concept is insignificant for the total sample. It means that there is no correlation between Career maturity and Self concept of senior secondary school students for the present sample. This holds true of sample of boys; but in case of girls CCA and Self concept were positively correlated.

The results obtained in the present study on relation between Career maturity and Self concept were partially supported by Badoni (2006) who found that no significant correlation occurred between Self concept and all parts of Competence test in case of boys; and in case of girls, Self concept and CCA along with all parts of Competence test were negatively correlated. But the present conclusion does not find confirmation with the results indicated by study of Kaur (1992) and Dixon (2000).

Table4
7x7 correlation matrix showing coefficient of correlation between Career maturity and Self concept for the total sample (N = 200).

Variables	CCA	SA	OI	GS	PL	PS	SC
CCA	1						
SA	.243**	1					
OI	.278**	.561	1				
GS	.232**	.435	.641				

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PL	.217**	.348	.529	.602	1		
PS	-.139*	-.150	-.180	-.110	-.41	1	
SC	.120	0.085	0.052	.068	.019	-.028	1

* Significant value at 0.05 level is 0.138

** Significant value at 0.01 level is 0.181

Table5

7x7 correlation matrix showing coefficient of correlation between Career maturity and Self concept for the total sample of boys (N = 100).

Variables	CCA	SA	OI	GS	PL	PS	SC
CCA	1						
SA	.221*	1					
OI	.330**	.495**	1				
GS	.169	.439**	.643**	1			
PL	.122	.244*	.552**	.623**	1		
PS	-.058	-.010	-.079	.079	.87**	1	
SC	0.042	.049	.094	.146	.006	.043	1

* Significant value at 0.05 level is 0.195

** Significant value at 0.01 level is 0.254

Table6

7x7 correlation matrix showing coefficient of correlation between Career maturity and Self concept for the girls sample.

Variables	CCA	SA	OI	GS	PL	PS	SC
CCA	1						

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SA	0.261	1					
OI	.221	.623	1				
GS	.291	.439	.605	1			
PL	.302	.427	.470	.538	1		
PS	-.247	-.309	-.310	-.332	-.294	1	
SC	.228	.136	.047	.052	.082	-.144	1

* Significant value at 0.05 level is 0.195

** Significant value at 0.01 level is 0.254

Implications

The conclusion of this study has some important implications not only for students and teachers but for all those who are concerned with education of the young, researchers, counselors and parents.

The findings of the study indicated that at senior secondary level Career maturity is inadequate and below average. There can be two reasons for this inadequacy; firstly, they are under the influence of their peers and parents to an extent that they are unable to make independent choice. Secondly, they are unaware of the horizons of opportunities open to them, and due to lack of information and counseling, they lack Career maturity. If they don't make choice of career according to their abilities and interests, it may lead to stagnation, failure and frustration among adolescents.

The present study also exhibited that Career maturity level among the senior secondary school students was low but the level of self concept was above average. The variable of high self concept which is an important factor for achieving success in life is not being properly utilized in our present system of school education. Such high level of self concept can be utilized to ensure academic and vocational development of our adolescents. A significant contribution can be made in this direction by providing latest information along with all the relevant material regarding various careers in school libraries.

Proper guidance to the students will help them to develop vocational awareness to make wise choice of career according to their interests and capabilities.

This will further enable the students to cope up with technological advancement and the rapid changes in the world of work and develop skills required for the career of their choice.

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The Influence of Family on the Career Interests and Choices of Youth

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The economy and along with it the employment chances and options for our adolescents entering adulthood have worsened in recent years (Buchholz & Blossfeld, 2012). There is increasing uncertainty in the lives of our adolescents as they search for what career options they would like to pursue. In any day and age an adolescent's family of origin might knowingly or unknowingly hold some sway over the direction the adolescent takes in career pursuits. However, given the reality of the economic times we are currently encountering (Buchholz & Blossfeld, 2012) along with the changing composition, structure, and dynamics of families, including recent increases in divorce rates, the increase in single-parent households including parents who have always been single, and the increase in grandparents living with grandchildren (Demo & Acock, 1996; Kreider & Ellis, 2011), recognizing and understanding family influence on adolescent career choice may be more important now than in the past.

What it is about their family of origin that may influence our youth in career choice is not just important from a social science standpoint, but also from the standpoint of practical application. The more families and their adolescents know and recognize how their family and their family's dynamics may influence their adolescents, the more that family can understand these influences and assert affirmative control to use those positive influences or, conversely, overcome any negative influences, to increase their chance of successful career choices for their adolescents. This paper will examine some of the potential influences of family composition, structure, and dynamics upon the career interests and choices of youth, along with how family systems theory may help in the recognition and understanding of family influence on those interests and choices. Although out of practical necessity this paper will discuss only some of the various potential family influences, and those only as a brief overview, it may spark an interest for more in-depth study and examination of this topic.

In particular we should view the question of family of origin influence on the career development and occupational choice of an adolescent through the lens of family systems theory. No adolescent exists in a vacuum. The influence and impact of the family of origin undoubtedly has significant. This can include family composition, such as number of members and structure; parenting style or styles, including parental involvement in their children's career development; the personal characteristics of every family member, such as level of education and occupation; and family constellation, such as the number of siblings, birth order, and the gender of the children; along with a host of other factors and attributes. We should keep in mind that family systems theory (Cox & Paley, 1997; White & Klein, 2008) teaches us that we are not researching about adolescents or working with an individual adolescent in a vacuum. A child or adolescent is, of course, influenced by his or her family, but the family also is influenced by the child or adolescent. Although this is sometimes referred to as the whole being greater than the parts, we should keep in mind that the whole is not static and every individual in the family changes the dynamics of that family with their entrance or exit and their behavior in between. From a positive youth development perspective, we are often interested in studying the family from the focal point of the adolescents in the family, but family systems theory teaches us that there are many other angles available for study, and every change in, and every attribute of each family member must be acknowledged as a part of what makes the family what it is and the adolescent a dynamic part of his or her family (Cox & Paley, 1997; White & Klein, 2008). We will recognize the interworking of systems family theory in the studies reviewed and the conclusions reached.

Parenting styles and family dynamics. Parenting styles and family dynamics may very well influence adolescent career choice. One study that serves as a good general introduction to this issue was conducted through the use of interviews, to determine how family of origin relationships and experiences might influence career development (Altman, 1997). This study indicates family experiences can be very relevant. Sometimes the correlations are not extremely strong and there are many intervening factors involved.

However, the researcher's conclusion is that the environment of the family of origin, particularly if very positive or very negative, can make a difference in career outcomes. For example, there is a reasoned argument that lack of support in choices, discouragement at "higher" career choices by family members, or the need to choose an occupation sooner than later because of need to escape the family of origin because of the living situation is correlated with more negative outcomes in career development for adolescents. A positive environment in the family of origin, however, such as support in career choices and guidance in them is correlated with more positive outcomes in career development. What further specific correlates does the literature indicate?

Is there a relationship between the parent-child relationship and the children's careers? One study hypothesized that a high-quality parent-offspring relationship would be associated with similar careers (or career aspirations) of parent and child (Tziner, Loverman, Dekel, & Sharoni, 2012). In fact, no direct correlation was found. However, a correlation was found between a high-quality parent-child relationship and job characteristics (though not exactly the same jobs) between the characteristics of the parents' jobs and the job characteristics of the jobs the children expressed an interest in pursuing. Characteristics are those attributes of a job including skills, knowledge, and abilities to do a job, along with the type of interests and personality that might go well with job performance. So, one may argue there is some influence of parenting style on the type of career the children are interested in, even if not a lock-step correlation of the actual occupation of the parents and that which the child wishes to pursue.

Such family dynamics as the roles that family members take on may correlate to eventual career choices, whether an actual occupation or at least the general type of occupation. One study of early family experiences compared a sample of trainee counseling psychologists with a matched sample of those not going into a counseling profession (DiCaccavo, 2002). The results indicated counseling psychology trainees reported significantly lower levels of care from their mothers, but reported higher levels of self-efficacy toward caring. Counseling psychologists, as one of the professions related to helping and assisting, along with personal contact, may attract those who did not receive a great deal of warmth in their own young lives, which may then have driven the child or adolescent to want to exhibit that type of behavior in their occupation.

Games are sometimes developed for the purposes of social research and they are a unique method for families to maintain their interest in their participation in the study being conducted. In one such study family members used a game to interact with each other, making family decisions to address the career goals of the family adolescents, while researchers observed their behavior (Peterson, Rollins, Thomas, & Heaps, 1982). The study focused on 96 families that had two adolescents, one male and one female. The researchers concluded that family decisions regarding career choices for the two adolescents favored the male adolescents' goals over the female adolescents' goals by a ratio of 4 to 1. This was true even after controlling for other factors that one might think would have an influence, such as the ordinal position of the adolescents, the employment status of the mothers and the education of the fathers. A limitation of this study is that it was conducted over thirty years ago. It would be interesting to find out, by performing further research, as to how much we have progressed since 1982.

Although many people have concerns regarding the issue of girls growing up without the same level of career aspirations as boys, this concern was arguably more acute 20 or 30 years ago. One study, conducted in the 1980's, examining the family influence on the career aspirations of girls examined the question of girls aspiring to careers that could be viewed as a higher level and traditionally dominated by males (Sandberg, Ehrhardt, Mellins, Ince, & Meyer-Bahlburg, 1987). This study calls females entering such careers "Pioneers". For the most part there was no strong correlation found between most family factors and the willingness and interest of girls to become pioneers. The chief factor in adolescence predicting girls becoming pioneers was the correlation with parental higher education. To a smaller degree femininity tended to be emphasized less for these pioneer girls during their childhood and adolescence, and these girls more frequently had mothers who had worked outside the home when growing up. This perhaps provided a role model (even if in a more traditionally female occupation) for the pioneer girl. Therefore, although one would need to concede that there are few absolute predictors, at least a higher level parental education and the mother working outside the home are correlated with girls seeking occupations traditionally filled by men. As with any research performed regarding gender roles more than 15 or 20 years ago, it raises curiosity about whether the results would be replicated today.

Do youth seek advice and assistance from their family regarding career development? Yes, to some extent they do (Whitson & Keller, 2004). According to the authors youth will most likely seek assistance from family members.

Although parents are more frequently sought after than siblings, that may be a natural reaction to the greater work experience of parents versus siblings, parents being assumed to know more about the topic. How parents respond to these requests for assistance, however, may have an impact on adolescent career choices as well.

Parental involvement in career choices. Parental involvement in their children's career choices can be considered closely linked to parenting styles, in that the degree of involvement in supporting and assisting versus hindering, or at least not supporting, one's children in their career development would, one can logically argue, tend to match the parenting styles in other areas in which parents are developing their children. There were studies, in fact, that researched parenting styles in one manner or another related to their children's career development and aspirations, so these studies are worthy of some discussion.

One Finnish study interrelates how the adolescents' motivation (autonomous versus a high degree of parental control) and what the adolescents thought about the career development process (e.g. is their goal realistic, how much stress are they enduring, what kind of progress are they making) compared with the degree of their parents involvement in their career preparation (e.g. support versus lack of engagement – note actual discouragement was not measured) (Dietrich & Salmela-Aro, 2013). Parental warmth and career preparation involvement (from a support standpoint) was correlated to less stress by the adolescents in later years regarding their career decisions. Adolescents were more likely able to pursue the careers they were interested in and motivated to pursue if their parents were involved in supporting and assisting them in their aspirations, and those youth had less stress related to their career decisions. These are of course Finnish adolescents and young adults, which may or may not be descriptive of the same or similar situations in the U.S.

A study was performed regarding what factors influenced an aspiration for a science career by 14-15 year old youth, (Rodrigues, Jindal-Snape, & Snape, 2011). The study concluded that the most important factor influencing the aspiration of a science career by the adolescents is their perception as to whether their parents want them to pursue such a career. This study illustrates the difficulty of trying to determine if career development and choice in the youth is influenced by the specific parental involvement in (for better or worse) the career development of their children, or in the style the parents use in the general overall raising of their children. We do not know if there is causation involved here in which parents wish for their children to pursue a science career, so the children aspire to such a career, or if these parents would be supportive of whatever career choice their children expressed (at least within a generally acceptable range).

Some influence of parental support and encouragement for career choices of adolescents may also be discerned from another recent study, indicating the type of involvement the parents have is correlated with the willingness of adolescents and young adults to be comfortable trekking down an occupational path that might not be the first choice of one or both parents (Cuiting & Kerpelman, 2007). Questionnaires were administered to 304 female undergraduates regarding parental feedback to the young adults, and their parents' willingness to discuss and support their career choices. The researchers concluded that this willingness for the parent to positively engage in career discussions may influence young women's certainty about pursuing particular careers – as opposed to changing their career decisions to fit parental expectations. Mothers and fathers may in fact have different levels and types of influences regarding this area. Having a close relationship with the mother and discussing career goals with her increases her influence, but decreased the father's influence – at least in the area of the daughter's certainty to pursue a particular career even if the father disagrees with that choice. In other words, a close relationship with the mother can reduce the daughter's distress and increase her certainty on a career, even if her parents may disagree with that choice.

As might be expected, the type of relationship with the parents does influence the willingness of young women to disagree with them – or agree with them. For example, if the father has a higher than average education level and has held discussions with his daughter, the daughter is more willing to change her mind. Above all else, this study emphasizes deep parental influence, yet generally not overwhelming control on adolescents in their career choice.

Sibling influence. Do siblings influence occupational choices and aspirations of other siblings? There is some indication that although not large, there can still be some influence made by siblings, either intentionally or simply through circumstances. An Ohio State University study examined whether there were sibling influences on career plans, including specifically for male and female youth (Morgan, 1983). This study, using data from the National Longitudinal Surveys of Labor Market Experience, 1979-82, focused on career aspirations of youth.

These adolescents had not yet entered their aspirational careers, although many had taken steps from an academic standpoint to begin their pursuit. The study indicated no influence could be found linking girls to the career choices of their sisters. However, the study did indicate that brothers reinforce each other's career aspirations, particularly during the high school and early college years when these youth are formulating their occupational ideas and goals and beginning the transition to full-time employment. Why is this? With the research performed the study can only offer a hypothesis. Some families may tolerate, or even subtly or outright encourage, more sibling rivalry and competition in brothers than they allow in sisters. If true, that may result in boys and young men using their brother's career aspirations to influence their own career aspirations. As family systems theory indicates, adolescents do not live in a vacuum – others in their family, including siblings may have an influence on their actions.

The research results of one study, covering multiple factors and examined in more detail elsewhere in this paper, found that, although statistically borderline, girls aspiring to higher level careers, particularly those transitionally dominated by males, had somewhat fewer older brothers than girls not aspiring to those careers (Sandberg, Ehrhardt, Mellins, Ince, & Meyer-Bahlburg, 1987). One may speculate on why this correlation exists. For example, families without, or at least with fewer, older brothers may allow their aspirations for children obtaining post-secondary education and attaining higher level careers fall more on their daughter or daughters.

Future research. There are correlations between family dynamics and characteristics and adolescent career development and occupation selection. Yet, there are still numerous questions as to how these dynamics interact. Answers to our questions will continue to be developed and refined, through research using a growing number methodologies and techniques. This includes the use of “family genograms”, more often used in family counseling, to map out the patterns and influences of an adolescent's or young adult's extended family, recording the family dynamics that could influence a young career-seekers decision-making (Malott & Magnuson, 2004). A well-mapped career genogram applied to a specific adolescent, indicating education level, degrees or professional certifications, occupations and related information, going back three or four generations, can be a valuable tool for analyzing that youth's career interests and possible development from a family systems theory perspective.

Practical Implications. A practical question is, why do many, perhaps even most, current and proposed career exploration and development programs targeted at youth appear to not involve the parents and families of the youth? For example, a recent issue of *New Dimensions for Youth Development* (Hynes & Hirsch, 2012) featured the topic of career programing for youth, linking youth to and preparing them for the world of work. Yet, family of origin members are only mentioned once in the entire issue of nine articles, that being one sentence in one article recognizing parents and siblings as an influence on career choice, with no actual family dynamics mentioned (Klein, 2012). No career programing article mentioned families as being useful or worthwhile to work with in the career development of youth, or that family dynamics and composition of youth may either reinforce or discourage what most of the youth programing is trying to accomplish. Now that we are aware that family of origin composition, dynamics, and parenting style are correlated with various career considerations of a family's adolescents, we should consider those factors in order to best determine if and how those factors should be considered in youth career programing. We should not treat career development programs as if they work with the youth in a vacuum. Some progress on this issue has arguably been made. For example, one career development program for youth engages the youth by trying to engender a sense of purpose in their career seeking (Dik, Steger, Gibson & Peisner, 2011). The program involves family, by having youth interview their parents regarding sense of purpose in their work, as a method to introduce and keep the parents involved and informed about the program.

Conclusion. Youth development and family relations go hand-in-hand, and it is through the lens of family systems theory that we can observe that connection. Yet, there is still much work to be done, and much more to be understood on the topic of the influences of family of origin and their dynamics on adolescent career development and occupation choice. For example, although a number of research studies have been conducted on several factors regarding family composition and dynamics, there has been inadequate attention to social class and socioeconomic status in the studies thus far, particularly in the United States, in evaluating family influences on career development (Whitson & Keller, 2004).

Although our conclusion is that family relationship factors and family dynamics influence the career choice and career development process of our youth, our inevitable conclusion is that the influence is likely to a modest degree (Whitson & Keller, 2004). No decisions by youth, on any subject, are made in a vacuum, however.

There are many intervening influences other than factors and attributes of the family of origin that may guide an adolescent's career choice, and it is difficult to isolate one from another. Yet, the use of systems theory allows a more rich examination of how complex family dynamics are, and a greater ability to sort through direct and competing influences. More research is needed (Blustein, 2004), but with that greater understanding we may better apply policy regarding adolescent career development in the future.

From a policy perspective, although many factors associated with families and the dynamics within the family may influence career choice, our goal as a society may legitimately be to encourage the access and attainment of any career by any adolescent in our society, to the degree the youth is capable and interested enough to pursue that occupation. So, we must examine ways to use the positive dynamics of a family while finding ways to "get around" what appear to be factors and dynamics in an adolescent's family that may discourage that sort of free flow and access to their career of choice.

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Orientations of High School Students and Parents towards Career Decision-making

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Abstract

This study explored the orientations of high school students and their parents towards career decision-making. One of two qualitative techniques—focus group discussions and personal interviews—was used with each participant. The sample was constituted of 9 students from Grade 9 in a private school and 11 parents of these students. The non-probability technique of convenience sampling was used. Content and thematic analyses were carried out. Influences on career decision, challenges, attitudes, and expectations of high school students and the expectations that parents have regarding their child's career development were identified.

Keywords: career guidance/counselling, challenges, influences on career decision, parental expectations

Giving adolescents the opportunity and facility to realistically plan for their futures is an important goal of education. According to Erikson (1963), questions such as 'Who am I? What is the purpose of my life?' are pressing for the adolescent and need to be addressed at this stage of their development. Different people have different desires: to become successful, to make a lot of money, to make one's life count, to make a difference in this world, to help others, to find meaning and purpose, and so on. People want to be happy, but what is it that leads to lasting happiness? Research suggests that vocational identity achievement and job satisfaction are positively associated with life satisfaction (Hirschi & Herrmann, 2012; Rode, 2004). This could set up a positive spiral where satisfaction leads to better job performance. Hence, it is

important for individuals to choose a career that brings out who they are. This would mean that they truly and deeply enjoy what they make a living out of and contribute to their family and society in their own unique way. People's work impacts their personal lives, relationships, families, and surroundings. It is also the sphere of life in which people invest maximum time and energy. Hence, making one's career count is a critical ingredient to longlasting satisfaction.

The need for vocational guidance and counselling varies across cultures. Family businesses constitute a significant proportion of businesses in India (Ramachandran, 2012). Family businesses were considered as providing financial security and typically, the joint

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family system used to encourage the next generation to join the family business. Then there were government jobs which were considered to be a secure option. The last few decades have seen immense economic changes in India which have provided a platform for people to consider jobs other than family businesses or government jobs. Today, people have more options to explore different careers. However, during adolescence peer pressure is at its peak and youth are tempted to make choices that would be appreciated and admired by their peers, friends, parents, and others. Career development may not be optimised when the individual makes choices outside his or her area of interest or if he or she has a low aptitude to pursue a particular career that is deemed to be popular. Some Indian studies have pointed out that poor career planning can result in delayed decision-making with regard to career and cause long lags in career development (Arulmani, 2000; Arulmani & Nag-Arulmani, 2004). An Indian survey on work orientations and responses to career choices showed that students who made career choices without professional counselling and guidance were likely to choose careers that were trending, instead of careers that might be suitable for them (Arulmani & Nag-Arulmani, 2006). These reports in the literature highlight how important it is for young people to engage in career planning. They need to understand themselves, their interests, their aptitudes, their context (e.g., family environment and economic resources) and set realistic goals for themselves. Dhillon and Kaur (2005) compared career maturity, self-concept, achievement motivation, and locus of control between students going to government schools (owned by the State government) and private schools (owned by a private trust). They found career maturity was higher, self-concept was better established, and achievement motivation was stronger amongst the private school students. It was also noted that private school students had a stronger internal locus of control. This was attributed to the possibility that a more conducive learning environment and access to a wider range

of extra-curricular activities facilitated the development of career maturity in high school students. Despite the finding that career maturity was higher amongst private school students in relation to those in government schools, Kaur and Dorga (2011) found that at senior secondary level, in both government and private schools, career maturity was inadequate to deal with the career development tasks of this developmental stage. Based on their research they attributed this finding to two possible reasons. Firstly, this could be because students are under the influence of their peers and parents and this influence is so strong that they are unable to make independent choices. Secondly, they are unaware of the opportunities open to them, due to the lack of information and counselling. The same group of adolescents had high scores on positive self-concept. The authors point out that positive self-concept could be utilised for success and improvement in career maturity, if combined with the provision of relevant career development material such as career information in school libraries. In another Indian study, Bakshi, Gandhi, Shah, and Maru (2012) found that youth from Mumbai aged 18-to-28 years perceived that they themselves had played a greater role in choosing their own specific career. In comparison, parents/other family members and teachers were cited as the next important influences on career choice. Career guidance services were hardly utilised when it came to career decision-making.

Developing a vocational identity is an integral part of the process of overall identity development (Blustein, Devenis, & Kidney, 1989; Vondracek, 1994), and as Erikson (1963) has pointed out, individuation is an integral feature of identity formation. Hence, the family and its relationship to the individual emerge as an important factor. Research (e.g., Grotevant & Cooper, 1988; Rice, 1990) has shown that the process of individuation-separation and emotional bonding to the family predicts the exploration of identity. Based on his research, Blustein (1997) made three important observations: (a) There is a

positive relationship between individuation-separation and self-efficacy in vocational exploration, (b) children's ability to explore the world and make choices with regard to their vocation depends on the security of family relations, and (c) parental encouragement and support has a positive impact on children's exploration behaviours and reduces the tendency to foreclose prematurely. Young, Friesen, and Borycki (1994) found that families with controlling, rigid parents blocked opportunities to explore, while family atmospheres with well-balanced control and discussion on different points of view promoted vocational exploration. With regard to socioeconomic status (SES), students from low SES homes underwent more confined vocational moratoria. In other words, searching, exploration, and introspection were limited. This could be related to economic limitations which could have diminished professional aspirations (Hartung, Porfeli, & Vondracek, 2005).

Objectives

The literature reviewed shows that variables such as career maturity, self-concept, achievement motivation, and similar variables have been researched in the Indian context. These are mainly person-related variables. There seems to be lesser information available on contextual variables such as family support, attitudes, perspectives, and expectations in the Indian context. It also seems that much of the research has been quantitative in nature. This study was designed keeping in view the possibility that understanding the situation through qualitative research would add meaning to the existing quantitative data. Hence, the following objectives were framed.

1. To explore the orientations of high school students from a school in Chennai with respect to career decision-making. The benefits of career guidance and counselling for high school students are evident in literature. This study explored the

perceptions of high school students in order to gain an understanding of the contextual influences and expectations from career guidance and counselling.

2. To understand the expectations of parents, of the children in the study, about their children's career choices. As seen in the literature reported earlier in the paper, parental support facilitated an improvement in career maturity among adolescents. Hence, it was assumed that exploring the attitudes and expectations of parents in the Indian context would make a further contribution to the literature and perhaps to the development of suitable interventions for parents.

Method

The Qualitative Approach

The qualitative approach was selected for the following reasons. Firstly, standardised and culturally validated tools relevant to the Indian context to measure the variables identified for this study could not be identified. Secondly, the few studies that have focused on career development in India are mostly quantitative in nature. Hence, it was felt that non-numerical, more microscopically-analysed data would make a unique contribution to the literature. It was also assumed that studying the needs of high school students qualitatively could open a different dimension to understanding their needs and expectations with regard to vocational guidance and counselling, as quantitative methods do not go into person-specific, finer details.

Sampling and Sample Characteristics

This is an exploratory study and its objective is not to generalise findings but to provide a platform for a more detailed analysis at a later stage. Hence, the non-probability sampling technique of convenience sampling was used. Participants were selected based on ease of access and proximity of the school to the researcher.

Nine students from Grade IX (six boys and three girls), studying in a private school in Chennai city, Tamil Nadu, participated in the study. These students were fluent in English and were from homes with middle socio-economic status. Socio-economic status was ascertained based on family income and educational status of father and mother. The norms for family income were extracted using the formula from the Kuppuswamy Socio-economic Scale Modified (Ghosh & Ghosh, 2009) and the National Urban Consumer Price Index for 2014 (i.e., the base year when study was conducted). The mean age of the students was 12 years and 8 months ($SD = 0.67$ years).

Eleven parents from the same school comprised the parent sample (four were mothers only, three were fathers only, and four sets of both parents). In the case of couples, though both parents participated, the responses were consolidated into one. All parents were South Indians and employed. The main occupations were administrative services, business and teaching.

All participants were approached through the school after obtaining permission from the school principal. Their participation was based on willingness, and allocation to the focus group discussion (FGD) or personal interview was based on their choice.

Table 1
Distribution of the sample across the two data collection methods

Participants	Focus group discussion	Personal interview	Total
High school students	8	1	9
Parents	9	2	11
Total	17 (2 FGDs)	3	20

Measurement

One of two methods of data collection was used with each participant, namely, focus group discussion (FGD) and personal interview. The tools for both the methods had the same open-ended items comprising five questions each. That is, the same items were used as discussion points for the focus group and as questions in the interview schedule. The students and the parents had different questions to answer.

The questions were validated by two experts in the field of education (in private schools): One was the principal of the school where the study was conducted and the other was a headmistress in another school. Both the educationists had over fifteen years of experience in the education system, and were chosen to validate the questions because of their

rich experience with students and parents and their understanding and knowledge of current trends. The experts were asked to scrutinise every question and comment on its difficulty level and relevance to the study. The questions were also given to three parents and three high school students from the school under study (these students and parents did not participate in the final study) for face validation. Based on the feedback obtained, changes were incorporated into the final interview schedule.

Questions for students. The questions addressed students' perceptions of influences on their career choice, the challenges they may face, and their feelings and thoughts about the future. Table 2 presents the questions that were used with students, both for the FGD and the personal interview.

Table 2

Questions used for the focus group discussion and personal interview with students

No.	Question
1	Have you decided about what you want to become in the future?
2	Who/what will influence you in making your choice?
3	What are your feelings towards making a choice of what you want to study next?
4	What difficulties do you anticipate (or face) in making your choice?
5	What would you expect from career counselling?

Questions for parents. The questions addressed parents' expectations of their child's career choice,

the freedom they would give their child and their dreams and concerns for their child. Table 3 presents the questions that parents were asked.

Table 3

Questions used for the focus group discussion and personal interview with parents

No.	Question
1	Would you allow your children to choose their field of study (career)?
2	What are your concerns about your child's future career?
3	What are your dreams for your child?
4	How would you react if he/she chooses a field that you do not like?
5	What would you expect from career counselling for him/her?

Execution of the Study

Focus group discussion. Two FGDs were conducted, one for each of students and parents (see Table 1). The FGDs were facilitated by the first author. A notetaker, who was a postgraduate student of psychology and trained in qualitative methods (including how to conduct FGDs), was present to record the points being said. Whereas the student FGD was of 50 minutes, the parent FGD was of 70 minutes.

Personal interview. A face-to-face individually-administered interview was conducted with a male student from Grade IX. Likewise, two personal interviews were conducted with parents: one with a mother of a female student and the second with both parents of a male student. The interviews were recorded in audio format with the permission of the participants. Verbatim transcripts were created after the interview.

Ethics and Informed Consent

The tools and design of the study were presented to the principal of the school and the necessary clearance was obtained to conduct the study in the school. The purpose of the study, matters related to confidentiality, the fact that the participant could opt out of the study at any time, and that the findings of the study would be shared with the participants were explained to the participants. Written informed consent was obtained from the students and parents.

Data Analysis

The data was analysed using content analysis through the following steps.

- The first author read through all transcripts and made brief notes in the margin whenever an idea or a concept emerged and lists were created.

- The lists were then organised into categories, each containing words and phrases with similar meaning.
- The categories were examined more closely and themes were identified under each category.
- A frequency analysis was conducted and themes were arranged in descending order of frequency under each category.

Findings and Discussion

Findings from the Student Sample

Four categories emerged from the content analysis of the student data with specific themes linked to each category. These are summarised in Table 4 and then discussed in detail with illustrations.

Table 4
High school students' orientation towards career guidance and counselling

Category	Themes
Influences on career decision-making	Personal preference
	Media
	Role models
	Family preferences
Attitudes and emotions	Hope/confidence
	Anxiety
Anticipated challenges in career decision-making	Parents' objection
	Finance
	Future scope
	Uncertainty
Expectations from Career Guidance	Self-Understanding
	Parental counselling
	Direction/ideas
	Information

Influences on career decision-making. Four sub-themes emerged under this category. Interests, expressed as activity preferences, were a central element and characterised seven responses.

Examples:

"I love to play cricket [sic] and I can play for the full day. I wish I can become a cricket player." (Male [M]/14 years).

"I love to draw. I want to sell my drawings in the future." (Female [F]/13).

It is important for individuals to enjoy what they do. Some of the most well-known theories in career psychology focus on identifying interests when it comes to career counselling (e.g., Holland, 1959). Bakshi et al. (2012) found that (privileged, Mumbai) youth perceived their own self as

the most important influence on their career choice (followed by parents and teachers); their explanations for rating the self as the most important influence included making a career choice based on their interests, likes and dislikes, strengths and the match of these with the requirements in a particular occupation. Concerning adolescents, the findings of Vondracek and Skorikov (1997) suggest that school, work, and leisure interests of high school students are closely interrelated and, most likely, all represented variation in the general interests of adolescents. In this study as well it was found that interests played a significant role in career decision-making among high school students.

Five students shared responses that indicated that their career interests were influenced by the media. Television programmes, movies, documentaries, and

internet resources were reported as being strong sources of influence and information.

Examples:

"Watching documentaries on scientists has made me want to become one and I love science." (M/13).

"I love to watch National Geographic and Discovery. I want to become a wildlife adventurer." (M/14).

The power of the media is well known. While it is a strong influence it can also be a powerful tool to reach young people in today's world. Studies have suggested that the media's effects on adolescents are the result of social learning (Brown, 2002). Despite the common notion that media negatively influences youth, in this study the students identified it as a positive resource. Exposure to professions that are not seen in everyday life through media can be an opportunity for adolescents to explore careers beyond the usual.

The influence of role models on vocational choices was reflected in four of the responses of students. In similar vein, the influence of family preferences was seen in four responses.

Examples:

"I want to become an IPS officer like my uncle." (F/13).

"My dad wants me to become a civil engineer so this is my dream." (M/14).

This is reflected in the findings of Arulmani and Nag-Arulmani (2006) who reported that significant others in the career aspirant's life play a vital role in his or her career development behaviour. In the Bakshi et al. (2012) study, where 80% of the youth identified their own self as having played a more or most important role in their career choice, as many as 68% identified one or more family member as having had an impactful role in their career decision-making.

Parents, especially fathers, had an influence on what the child may choose: three of four students (who stated family preference) reported this while one reported the influence of her mother. This could reflect deeper cultural processes whereby the father carries the ascribed role of "head of the family" (Arulmani, 2014). However in the Bakshi et al. (2012) study the percentage of youth who stated that their mother had played a more or most important role in the youth's career choice was comparable to that obtained for father's influence (i.e., 42% vs. 43% respectively).

Three students admired great people (e.g., the former President of India) and were motivated to emulate them. This again could be a function of social learning where the adolescent tries to replicate behaviours that they admire. Bandura (1989), for example, describes vicarious learning and verbal persuasion as having a formative influence on social cognitions.

Attitudes and emotions. Two themes emerged under this category. Six students felt happy, confident, and eager when thinking about making vocational choices.

Examples:

"I feel that whatever I do, I can do it well because I will work very hard. So I feel happy about my future." (F/14).

"I feel excited when I think [about] becoming a pilot." (M/14).

As a sense of hope develops, it enables one to orient oneself toward the future and to expect that one's desires can be attained (Erikson, 1968, 1982). With hope, an adolescent will search for identity and explore various alternatives, fully believing that choices will be found (Marcia, Waterman, Matteson, Archer, & Orlofsky, 1993). As Erikson (1963) stated, a feeling of hopefulness facilitates making choices; therefore, it is important to motivate and encourage students with the idea that they all can have bright futures. Creating access to career information and

to counselling services could reduce unnecessary anxiety and stress with regard to future plans.

Two students reported feeling anxious and/or directionless.

Example:

"I have no idea of the future." (F/13).

"I am afraid that I may not get a good job because I can't get more marks." (M/14).

It was observed that anxiety about the future came along with a lack of competence. Two students scoring below average in their school examinations stated that their fear was based on their inability to compete with their peers. This could also be due to the existing education system in India which gives undue priority to marks (Jeyaraman, 2015). Students who do not score high marks tend to feel hopeless and afraid of the future. Career guidance can help reduce this anxiety by focusing on the strengths of each individual. Wachtel (1993) pointed out how focusing on strengths and minimizing a focus on negatives in the career counselling process promoted optimal functioning. Self-exploration could reveal such strengths, and such self-awareness could help the adolescent feel more competent. This could help reduce fear and build confidence.

Anticipated challenges in career decision-making. Four themes emerged in this category. The primary difficulty that this sample of high school students reported was objections from parents and society. Over half of the students anticipated that parents would not accept their choice.

Examples:

"I like fashion designing but my parents won't allow me." (F/14).

"They don't want me to become a reporter." (M/13).

Parents' desires for their children, when enforced, could create stress in the child. An important aspect of holistic career guidance is to build parents' awareness of the importance of recognising the suitability of the child for a particular career. This could facilitate healthy choices as seen in the reports of other researchers (e.g., Grotevant & Cooper, 1988; Rice, 1990). This could also be a factor in developing the person's self-concept.

Four students stated that their parents may not be able to afford giving them an education if they made their choice.

Examples:

"My parents can't pay to make me a doctor." (F/14).

"If I don't get a merit seat, I can't do engineering." (M/13).

When considering higher education, affordability becomes an important factor. As pointed out in the literature, economic limitations could be associated with diminished professional aspiration (Hartung et al., 2005). Exposing adolescents to useful information can address this issue and can help the student to not lose out on opportunities. This may be overcome with adequate career preparedness.

It was also found that four students rejected considering certain career options because of their negatives opinions and beliefs about these careers.

Examples:

"I like to write, but I can't do it as a career, then money?" (F/13).

"Studying history has no scope, but I like it." (M/14).

Effective career counselling could break such stigma. Such statements also reflect a lack of confidence and knowledge of various opportunities. It could also be

associated with stereotypical beliefs of what a career is expected to be.

One-third of the students expressed uncertainty and felt that their career development would be influenced by factors beyond their control (e.g., economic environment, the job market, and getting a seat in a desired college).

Examples:

"If I become an engineer, I don't know if they will pay me well at that time." (M/13).

"Will I get a job if I become an animation artist?" (M/13).

Every adolescent aspires to do well in life and be successful. Financial success is one of the key motivating factors behind choosing a career. An individual cannot have control over external factors such as macro-economic trends and changes in the labour market cycles. Economic pressures could underlie the tendency to neglect one's passion and pursue a path that offers imagined future financial success. Youth need to be motivated to excel in whatever they do. Underlying effective career guidance is the principle that excellence will eventually contribute to financial success.

Expectations from career guidance and counselling. Four themes emerged in this category. Many of the students (6) expected to gain self-understanding through career guidance and counselling.

Examples:

"I want to find out more about myself." (F/13).

"I want to know what I can do well and see my hidden talents." (M/14).

It was observed that the students yearned to understand and discover themselves. One of the key goals of development of an adolescent is to construct his or her identity. According to

Phillips and Pazienza (1988), in a wise choice of a vocation, a clear understanding of oneself, one's aptitudes, abilities, interests, ambitions, resources, limitations, and their causes is essential. These are all essential aspects of one's identity. Self-discovery in itself can be a motivation for the future and aid in the process of development.

Four students also insisted that parental counselling was important.

Examples:

"My father wants me to become a doctor and my mother wants me to be a lecturer. They really confuse me. I wish they stopped confusing me." (F/13).

"My father will let me do what I want but my mother wants me to become an IAS officer." (M/14).

This indicates that parents ought to be part of their child's career counselling and parental support could be facilitated. This is in line with Blustein's (1997) findings that a supportive family environment encouraged exploration.

Five of the nine students indicated that they expected future direction and guidance. They believed that they had different interests and needed guidance to be more certain and confident.

Examples:

"Different people tell me I can do different things. I need help to choose correctly." (F/14).

"I feel so confused I want someone to tell me what is best for me." (M/13).

As Erikson (1963) pointed out, adolescence is a stage where confusion could lead to crisis. Adolescents require clarity. They are in search for the right answers and that is why they are confused by "different voices" telling them what to do. Career counselling can tap into this curiosity and attempt to clarify doubts and blind spots.

Findings from the Parent Sample

Two main categories emerged from the content analysis of the parent data

with specific themes linked to each category. This is summarised in Table 5 and then discussed in detail with illustrative thick description.

Table 5
Parents' perceptions of their children's career choices

Area	Themes
Expectations from children	Freedom of choice Financial stability Happiness in life Service to society
When choices contradict expectations	Convince Analyse/debate Moral obligations/objections Permit

Expectations from children. All 11 parents in the study stated that they would give their children the freedom to choose their own career. This was because they wanted their children to be happy in life and they believed that their children knew their own strengths and weaknesses.

Examples:

"My son knows best what he can do and what he can't, so it's best for him to decide." (Mother[Mo]/Male[M]).

"Only if she chooses what she is comfortable with, she will be happy." (Mo/F).

However, this finding contradicts the children's opinion of parental influence on their career choice. Discussion with the students consistently indicated that their primary challenge was to deal with parents' objections and expectations. While it is possible that parents here are giving socially acceptable responses, it is also clear that the very need to give such a response is an interesting finding that needs further investigation. It is possible, for example, that while contemporary Indian parents wish to give their children greater freedom of choice, deeper cultural factors and concerns related to financial security affect this desire.

Parents did seem to set limits. These limits were in terms of their expectations of their child's future. The main concern of eight parents was the suitability of a particular profession for the child and whether or not it was sufficient for a comfortable living.

Examples:

"I do not expect my daughter to make lots of money but she should have sufficient to be happy and independent. Also, the role she plays should be suitable to her. I don't want her to become stressed out with work in the future. She should enjoy work and life." (Mo/F).

"Today people work under too much stress. This should not be so with my son." (Father [F]/M).

Considering the stress that is associated with work these days, parents seemed wary of their children going through work-related stress and its consequences. However, six (especially those parents with sons: five of the six) emphasised financial stability and growth.

Examples:

"He has to live up to the family status." (Couple/M).

"He should earn well to be happy" (Fa/M).

There was a strong underlying theme in parent responses that financial success determined happiness. Here we see that though parents perceive it as freedom, there are strings attached.

Other unique responses included the desire for their child to excel, gain knowledge, and wisdom.

Examples:

"I don't mind whatever my son chooses but he should excel and be of some use to others. I cannot get him a payment seat either, so his studies should not be too expensive and he should study well." (Fa/M).

"She should excel in whatever she does." (Mo/F).

When choices contradict expectations. The parents were questioned on how they would react if, hypothetically, their child made a choice that they did not like. It was noted that seven parents stated that they would try to convince the child. This again contradicts their own perception of giving their children the freedom to choose their future career.

Examples:

"We know the world better so we should try to make him to obey us." (Mo/M).

"We certainly are trying to convince her to become a doctor as she studies well but she wants to study mathematics." (Couple/F).

It was seen that in most cases parents underestimated the child's capacity to choose for himself or herself. This might be detrimental to the adolescent's development. The literature indicates that parents' poor collaboration with their children's decision-making is associated with low levels of vocational identity (Hirschmann & Renker, 1989). Curbing exploration could contribute to premature foreclosure. Once again this

points to the importance of parental counselling.

Five of the parents said that they would analyse and debate over the issue.

Examples

"I will assess the practicality of the decision." (Fa/F).

"We can weigh the pros and cons before arriving at a decision." (Fa/M).

Four of the parents were also concerned that their child's choice should not offend their family or community's moral and religious sentiments.

Example:

This girl was passionate about fashion designing:

"In our culture, we don't support such a kind of career." (Mo/F).

This girl's father was a professional dancer and she was passionate about dancing:

"Her father being a dancer is fine but not her. It is against our family." (Mo/F).

Here again, while contemporary Indian parents say that they will allow freedom, underlying motivations and values seem to continue to influence the process.

Only three of the parents mentioned that they would accept whatever career their child chose.

Examples:

"We have no right to control our growing children. Ultimately they have to be taught how to make decisions and bear the consequences. So I believe that my son will learn by making his own choices but I want him to be guided by an expert." (Fa/M).

"We love her and no matter what, we will accept her choice." (Fa/F).

These parents seemed to give their children freedom to make their choice without any conditions. As seen in Erikson's (1963) developmental theory, one of the features that characterise adolescence is the beginning of independent thought and action. Allowing the individual this freedom may facilitate resolution of various issues related to identity formation. From a career guidance point of view, parents who accept and understand this are likely to become facilitators of their children's career decision-making.

Conclusion

This paper has juxtaposed the career development orientations of a small group of middle class, high school students' with parents' orientations to the career development of their children. A salient trend in the findings is that while the parents in this study asserted that they give freedom to their children, their other clarifications contradicted their perception of freedom provision. This is congruent with collectivistic cultures in which dependence on parents is socially sanctioned and expected much beyond adolescence. However, positive interventions that address the concerns that parents may have (e.g., with regard to financial security and moral obligations), may facilitate parental support and reduce unhealthy control.

The preliminary findings about student perceptions indicate that encouraging students to engage in activities of their interest could facilitate effective career decision-making. Using the media to make information available and provide exposure to various professions could help students broaden their ideas of options available. It was seen that though parents assumed they gave their children the freedom of choice, this was contradicted by their concern about whether the child's career choice allowed adequate status and financial

stability, and whether it met cultural expectations. These are genuine concerns that require attention. However, they need not stifle the child's engagement with opportunities. Intervening with parents to help clarify their doubts and create awareness of various options, could alleviate their fear about their child's future.

Going back to the students, the two strong emotions that were strongly expressed were: confidence/hope and anxiety. Further research could investigate these opposed yet frequently co-occurring emotions more deeply. The challenges that the students anticipated with regard to career choice were objections from parents, financial constraints, scope of the career, and uncertainty due to external factors.

The contradiction between parents' views of giving their children freedom and the children's view of accurately perceiving this lack of freedom as a challenge is an interesting finding. In line with this finding, career counsellors could facilitate interaction between parents and children on the issue and discuss the reasons for such a contradiction. Further research can also help understand the dynamics involved between parents and adolescent children that bring about this contradiction.

The challenges of financial constraints and external factors can be dealt with by individual counselling and making adequate information available. Individual counselling could take into account the contextual factors such as affordability, which can help an adolescent realistically plan for the future.

This was an exploratory study on the orientations of students and parents towards career guidance and counselling. The themes that emerged can be used as pointers for further investigation both for the development/modification of interventions as well as for more comprehensive research.

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The vocational maturity and career choices of female industrial design students in Taiwanese universities

ABSTRACT

Product and Industrial Design (ID) is frequently regarded as a masculine and male-dominated profession. Female Taiwanese industrial designers, similar to those in other countries, have not been as active as men in this field. However, more female students are enrolled in ID programmes in Taiwan than are male students, with the total ratio of female students reaching 61 per cent countrywide. To understand the cause of such inactivity, investigating female ID students' career choices as they complete professional education is crucial. This study investigated the vocational maturity and career choices of female ID students in Taiwan. A questionnaire survey was conducted on 417 female ID students from 24 departments belonging to one of 23 Taiwanese universities. The results show that vocational maturity was generally positive, but a significant proportion of women intend to work outside of ID, possibly due to an overly negative view of ID as an industry. The outcome can be used to guide educators to assist female ID talents plan their career and enhance their employment opportunities.

KEYWORDS

design education
female industrial
design
industrial design
vocational maturity
career choices

INTRODUCTION

Product and industrial design (ID) education in Taiwan historically spans more than half a century. Although ID graduates in Taiwan have increased annually, the number of graduates working in the design profession has fallen short of expectations (Career Employment Information 2003). Chou (2008: 300) interviewed three chairmen of ID programmes in Taiwan and determined that only approximately 50–60% of their graduates continued to work in the ID profession. Yang et al. (2010: 33) investigated 904 ID students from six universities in Taiwan and determined that 37% did not intend to enter the ID profession after graduation. These ID graduates most likely lack the desire to work in ID because they do not sufficiently understand either themselves or the ID profession, or they may develop negative views of the profession. Yang and You (2010: 602) investigated 360 ID students, 58% of whom were familiar with the nature and future development of the ID profession when they decided to study ID. This implies that a substantial portion of ID students do not understand the ID profession comprehensively. An incomprehensive understanding of the ID profession may influence ID students' learning attitude, causing low performance levels and their career decisions after graduation.

Wanberg and Muchinsky (1992: 76) claimed that the vocational maturity of university students prior to graduation influences learning incentives and career selection. Currently, women make up 61 per cent of students on ID programmes in Taiwan. This article reports our investigation of the vocational maturity and career choices of female ID students from Taiwan universities. We addressed the following research questions: how developed is the vocational maturity of female ID students in Taiwan? What influences female ID students' decision to major in ID? What influences female ID students' career decisions after graduation from university? What are female ID students' career decisions after graduation from university? Our findings can be used to plan career guidance programmes for female ID students and improve design education.

Overview of ID education in Taiwan

Taiwan established its first collegiate-level ID department in 1964 and its first master and doctoral programmes in 1991 and 2000, respectively. Universities in Taiwan have recruited an increased number of ID students to meet corporate demand for design talents. Whereas in 1987 just six programmes were related to ID in Taiwan, in 2014 there were 38 schools with 39 related programmes. The number of ID students and graduates has thus increased substantially. For the 2011–2012 academic year, 9282 ID bachelor programme students were enrolled; 1757 ID students graduated in the previous year (Ministry of Education Department of Statistics 2012).

Currently, in Taiwan, substantially more female students are studying in ID departments than male students are. The primary causes for such a phenomenal change are listed as follows. ID departments previously only accepted male students, but are now open to female students as well. Universities also began establishing ID departments in their engineering schools during the 1990s. They recruited either science-oriented high school graduates or technically trained graduates from vocational high schools. In the beginning, the ID departments were dominated by male students (75%–90%) (Ministry of Education Department of Statistics 2012). At the time, only a few departments accepted humanities-oriented students; in these departments the percentage

of female students was permitted to be high (44%–65%). Subsequently, female students majoring in science and technology became a trend. Accordingly, an increased number of female students began enrolling in ID departments. Furthermore, several universities established their design schools in 1997–1998. The university ID programmes in Taiwan, recruit students with various backgrounds, abilities, and aptitudes from senior high schools and senior vocational schools through different channels. ID students who do not understand their own aptitude and interests and major in ID without understanding the ID profession encounter adaption problems, thereby generating the need for career guidance (Yang and You 2010: 605).

Vocational maturity and career selection

Super (1955: 153) defined vocational maturity as ‘the place reached (by the individual) on the continuum of vocational development from exploration to decline’. Crites (1974) considered vocational maturity as the degree of development for engaging, cognizing and making independent choices; maintaining enthusiasm; and understanding the process of selecting a vocation. Sun and Chin (1998: 86) ascertained eight constructs covering the concept of vocational maturity: (1) self-recognition, (2) vocational recognition, (3) information application, (4) vocational attitudes, (5) vocational choices, (6) vocational values, (7) individual adjustment and (8) assessment of conditions. The stage of university education is a period of exploration in which students enquire about self and suitable vocations to form personal and vocational conceptions (Super 1957). When a university student is lacking vocational maturity, he or she possesses insufficient information and is unaware of the dynamic changes in society; thus, they cannot sufficiently prepare for career selection. Huang (2003: 2) suggested that people with a low degree of vocational maturity are frequently disoriented, pessimistic, unsatisfied and unsuccessful. The degree of vocational maturity of university students before graduation influences their career selection and learning motivation.

University students are in a transitional period in their lifelong career development. During this period, they explore career orientations and eventually make concrete career decisions. The relevant literature indicates that the attitude towards vocational selection is positively dependent on age and the year of study in university: the higher in year of study, the higher the ability of vocational decision-making (Zhang 1994: 251; Ren 2004:86). In addition, socio-economic conditions, work and education experience, and receptivity to advice all contribute to a student’s ability to use career information; vocational maturity and vocational orientation are influenced accordingly (Chao 2005: 78). Another crucial factor for career selection is gender. Undeniably, gender stereotypes still exist in society. Those who identify with the traditional female role commonly have low confidence in career decision-making; therefore, female students can easily lack confidence (Hsieh 2003:39; Wu and Wang 2003: 166). Honellender discovered that male university students exhibit improved vocational self-conception and a higher level of self-esteem than female students do (cited in Huang 1991: 59). There was significant difference between the achievement motivation of male and female college students (Shekhar and Devi 2012: 108). Fassinger indicated that these competences directly influence the career decision-making of female students (cited in Fu 2000: 10). Furthermore, the influence of gender on career decision-making primarily stems from expected gender roles and individual career motivation.

Female ID students and professionals

Female students majoring in ID were previously rare, a phenomenon that occurred not only in Taiwan but worldwide. Whiteley (1993:146) mentioned that only 2% of British ID graduates were female. A similar situation prevailed in the United States in the same period. The percentage of female students in ID departments was less than 20%, with no more than 10% in transportation design and approximately 50% in furniture design (Kirkham and Walker 2000). In Australia, whereas more male students than female students enrolled in ID courses were in the past, now the ratio is 50/50 (Hespe 2007: 10). Despite an increase in female industrial designers in the late 1990s, they remain a minority (Whiteley 1993: 147). American female industrial designers are increasing: in 1974, they comprised only 1%, whereas in 1986 and 1999, this percentage grew to 7% and 19%, respectively (Howard and Setliff 2000). In the United States, a quarter to a third of ID practitioners are members of the Industrial Designers Society of America, whereas merely 10% of the 3300 members are women. Therefore, ID remains a male-dominated profession (Berryman 2007).

Despite the increased number of women studying in ID departments in recent years, a substantial portion of them are not devoted to ID-related jobs after graduation. Preferences, discrimination, or structural reasons related to the labour market may influence the willingness of female ID graduates take ID jobs, but vocational maturity is one factor worth being explored.

RESEARCH DESIGN

This study was conducted in two phases between 2012 and 2013. In the first phase, in-depth interviews with 25 female ID students or graduates were conducted to explore vocational maturity and career choices. The interviewees were selected by purposive and snowball sampling based on educational background and current status. The subjects for in-depth interviews are categorized into three groups. The first group consists of third- or fourth-grade female students from Taiwan's ID departments – six from universities and seven from universities of science and technology. Freshman or sophomore ID students are not included because we want to take away the factors of early adaption (to the university as well as the curricular system), not being satisfied with and wanting to leave the department. The second group comprises six female graduates from ID departments within two years who went to graduate schools immediately. The third group includes six female graduates from ID departments within two years who entered the job market right after graduation. For details of the interview analysis, please refer to Yang and Liao (2013: 3–9).

Based on the interview results, we developed a questionnaire on vocational maturity and career choices. We then submitted it to ten female ID students as a pretest for revision. When administering the final version of the survey, we selected junior and senior female students from ID departments in Taiwan as the participants. The population satisfied the aforementioned criteria and consisted of 2405 third- or fourth-year female students in 39 departments from 38 universities (including universities of science and technology) in Taiwan.

To increase sample number and return rate, convenience sampling was taken in this survey. Facilitated by people we are acquainted with, the survey was first introduced to the senior students (third- and fourth-year students)

Content of Question	Type of Question	Statistical Methods
Personal Data	Single Choice	Frequency, Percentage
How developed is the vocational maturity of female ID students in Taiwan?	5-point Likert Scale	Mean, SD
What influences female ID students' decision to major in ID	5-point Likert Scale	Mean, SD
What influences female ID students' career decisions after graduation from university	5-point Likert Scale	Mean, SD
What are female ID students' career decisions after graduation from university	Single Choice	Frequency, Percentage

Table 1: The content and type of questions covered in the questionnaire and statistical methods used.

in twelve selected universities. A total of 392 questionnaires were valid at this stage. To increase the number of schools, we further surveyed 24 ID students from other universities during the event of Exhibition of Young Designers in May 2013. A total of 417 questionnaires were finally returned by respondents from 24 departments and 23 schools.

The statements in the questionnaire were clustered into three types: (1) four statements for obtaining information on participant demographics; (2) 69 questions on vocational maturity; and (3) 59 statements on career choices. Table 1 summarizes the content and statement types, describes the instruments and statistical methods used to analyse the data. A five-point Likert scale was used throughout the questionnaire to measure the responses from the participants, which comprised 'strongly disagree', 'disagree', 'neutral', 'agree' and 'strongly agree', and were weighted 1, 2, 3, 4 and 5, respectively, for quantitative analysis. The higher the value, the more strongly a participant agreed with the statement.

The measures of convenience used in the sampling process may have caused several known limitations, such as bias in selecting schools because of availability. Differences may also have occurred from one school to another (e.g., in the resources available to public and private universities). Furthermore, the number of participants varied among schools, as did high school background, academic performance and entry channel. Moreover, student performance in different schools was not standardized, nor were the participants' responses to the related question. In our survey, students' academic performance was assessed through participants' self-categorization using answers such as 'top 10%', 'top 11%–25%', 'top 26%–50%', 'bottom 51%–26%' and 'bottom 25%'. Such a scale may increase the possibility of false or subjectively biased responses. In addition to the issue of inter-respondent subjectivity, we further found an issue relating to measuring relative differences in levels of ability across the universities. Only 417 female ID students from 23 universities in Taiwan participated in this survey. The results may therefore be locally representative and any extrapolation to other universities should be treated with caution.

RESULTS AND DISCUSSION

Sample profile

The distribution of the participant demographics obtained using the questionnaire is presented in Table 2, showing a total of 263 juniors (63.1%) and 154 seniors (36.9%). Regarding university attributes, 236 (56.6%) of the

Item			n	% of respondent	% of population
the year of study in university	Junior		263	63.1	21.3
	Senior		154	36.9	13.2
University attributes	General university	public	134	32.1	54.7
		private	160	38.4	21.7
	Technical university	public	102	24.5	28.3
		private	21	5.0	2
Background in senior high school	General school		292	70.0	NA
	Vocational school		89	21.3	NA
	Comprehensive school		20	4.8	NA
	Junior college		4	1.0	NA
	Blank		12	2.9	NA
Academic performance	Top 10%		91	21.8	NA
	Top 11%-25%		137	32.9	NA
	Top 26%-50%		108	25.9	NA
	Bottom 51%-26%		58	13.9	NA
	Bottom 25%		14	3.4	NA
	Blank		9	2.2	NA
Total			417	100	

Table 2: Distribution of the participant demographics.

respondents were studying in public universities and 181 (43.4%) were studying in private universities. A total of 294 (70.5%) respondents were studying in general universities, whereas 123 (29.5%) were studying in universities of science and technology. Regarding high school attributes, 292 (70.0%) of the respondents graduated from general high schools, 89 (21.3%) graduated from vocational schools, twenty (4.8%) graduated from comprehensive high schools and four (1%) graduated from junior colleges. Regarding academic performance at the university level, 91 respondents (21.8%) were among the top 10% of their class, 137 respondents (32.9%) were ranked 11%–25%, 108 respondents (25.9%) were ranked 26%–50%, 58 respondents (13.9%) were ranked 51%–75% and fourteen respondents (3.4%) were ranked in the bottom 25%.

How developed is the vocational maturity of female ID students in Taiwan?

Among the 69 questions on vocational maturity, the highest mean ($M=4.19$, standard deviation, $SD=0.828$) was derived from the responses to ‘We do not have to prepare much for entering the job market because technology changes very rapidly’. Because this item is a reverse statement, the outcome indicates that the respondents believed that, despite the rapid progress of technology, preparation before entering the job market is still essential. The lowest mean ($M=2.73$, $SD=0.905$) was derived from the responses to ‘I know the vocation in which it is least easy to find a job’. This indicates that, regarding vocational perception, the respondents knew little of the general job market; for example, they did not know which vocation was associated with difficulty in finding a job.

Table 3 shows the means and SDs of the eight constructs for vocational maturity. The overall mean was 3.54, indicating a generally positive score on vocational maturity for female ID students. Among the constructs, 'individual adjustment' produced the highest mean of 3.94 (SD=0.22), and 'vocational choices' had the lowest mean of 3.22 (SD=0.25). Because even the lowest mean was higher than 3.0, the respondents indicated a degree of vocational maturity, as defined by selected constructs, that is generally positive. 'Vocational attitudes' produced the second highest mean of 3.86 (SD=0.30), indicating that the attitude of the female ID students when choosing a vocation was positive; therefore, they understood the necessity of knowing themselves and being prepared prior to entering the job market.

The construct, 'information application', ranked third, with a mean of 3.71 (SD=0.26), indicating that the female ID students actively collected data on related vocations and organized, categorized, and stored them for future reference when selecting a career. The construct, 'vocational values', ranked fourth, with a mean of 3.50 (SD=0.46). This indicates that the female ID students maintained a positive view towards evaluating vocations and jobs. They agreed on the notion that, when choosing a job, personal interest is the priority. They also believed that feeding oneself through job income is dignified. However, the reverse question – 'I prefer vocations with high popularity' – produced a mean of 2.93 (SD=0.931), which is close to 3.0, and a large SD. This indicates a polarized view towards the suitability of selecting jobs with a high demand for employees among female ID students.

The construct that ranked fifth was 'assessment of conditions', with a mean of 3.40 (SD=0.42). This indicates that the female ID students considered their competencies and job requirements in the ID market to evaluate suitable jobs. They seemed to understand the demands of the ID job market and the job requirements for industrial designers. However, the reverse statement, 'I do not know whether it is appropriate for me to enter the ID field', produced a mean of 2.80 (SD=0.992), which implies that the female ID students often doubted whether ID was suitable for them. Although they understood the needs of the market, they were uncertain about their competences or lacked self-confidence. The construct, 'self-recognition', was ranked sixth, with a mean of 3.32 (SD=0.28). This implies that the degree of self-identity among the female ID students was generally positive.

Construct	Question amount	Mean	SD	Ranking
Information application	12	3.71	0.26	3
Vocational attitudes	8	3.86	0.30	2
Vocational choices	6	3.22	0.25	8
Self-recognition	18	3.32	0.28	6
Vocational values	7	3.50	0.46	4
Vocational recognition	6	3.23	0.35	7
Individual adjustment	7	3.94	0.22	1
Assessment of conditions	5	3.40	0.42	5
Total	69	3.54	0.28	

Table 3: The means and standard deviations (SDs) of the eight constructs for vocational maturity.

The construct that ranked seventh was ‘vocational recognition’, and produced a mean of 3.23 (SD=0.35), which is lower than the overall mean of 3.54 (SD=0.28) and slightly above the median (3.0). This indicates the basic understanding of the female ID students regarding the ID profession. However, the reverse question, ‘I know the vocation in which it is least easy to find a job’, produced a mean of only 2.73 (SD=0.905), indicating that the students were unsure of the jobs that are the most difficult to obtain in the field. In other words, although they generally understood vocations related to ID, they were unsure about some aspects of working in the field. The final construct was ‘vocational choices’, with a mean of 3.22 (SD=0.25), indicating that the degree of the maturity of career selection among the female students was slightly above the median (3.0). Compared with the means of the other constructs, that of ‘vocational choices’ was the lowest. This suggests that female ID students tended to be unsure about the choices open to them.

What are the factors that influence female ID students’ decision to major in ID?

There are 25 questions covering personal factors, family background, schooling process, social factors and ID-profession factors. The means and SDs of all factors that may influence the female students to select an ID department are discussed as follows. The statement, ‘Compared with other disciplines, I thought that the courses offered by design departments would be less dreary’, had the highest mean of 3.84 (SD=0.967). This indicates that, compared with nondesign departments, on the whole they expected ID to be interesting. The statement, ‘the number of members in my family’, had the lowest score of 1.91 (SD=0.910), indicating that the number of family members tended to be the least important factor in the female students’ choice of ID.

Table 4 shows the means and SDs of the five major categories that may influence female students in selecting an ID department. The most important factors for women choosing ID were ID-profession factors, personal factors, and social factors. The ID-profession factors tended to be the most important in the female students’ decision to select ID departments. The category ranked the second highest was personal factors, of which ‘my personal interests’ produced the highest mean ($M=3.80$, $SD=0.936$). The factor, ‘The outcome of my college entrance exam or application’, had a mean of only 2.73 ($SD=1.275$). In terms of the social factors, by obtaining recent information on the job market and the workplace in the field of ID disclosed through the media such as TV and the Internet, the students knew that career development and salaries in the ID field are favourable and were persuaded to select ID.

Influential Factors	Question amount	Mean	SD	Ranking
Personal factors	6	3.17	0.426	2
Family background	6	2.15	0.148	5
Schooling process	8	2.61	0.429	4
Social factors	2	3.06	0.035	3
ID-profession factors	3	3.47	0.352	1
	25	2.89	0.517	

Table 4: The means and SDs of the five major categories that influence female students in selecting an ID department for undergraduate study.

What are the factors that influence female ID students' career decision after graduation from university?

A total of 30 questions covered personal factors, family background, the schooling process, social factors, ID-profession factors and factors of female susceptibility. Figure 1 shows the means and SDs of factors that may influence female ID students' career selection after university graduation. The response to 'personal interests' has the highest mean of 4.16 (SD=0.67), implying personal interest factors are the most important to graduates. Conversely, the statement, 'Men are the main source of income for families', had the lowest mean of 2.02 (SD=1.02).

Table 5 shows the means and SDs of the six major factors that may influence female students' career selection after university graduation. The most important factors influencing female students' career selection after university

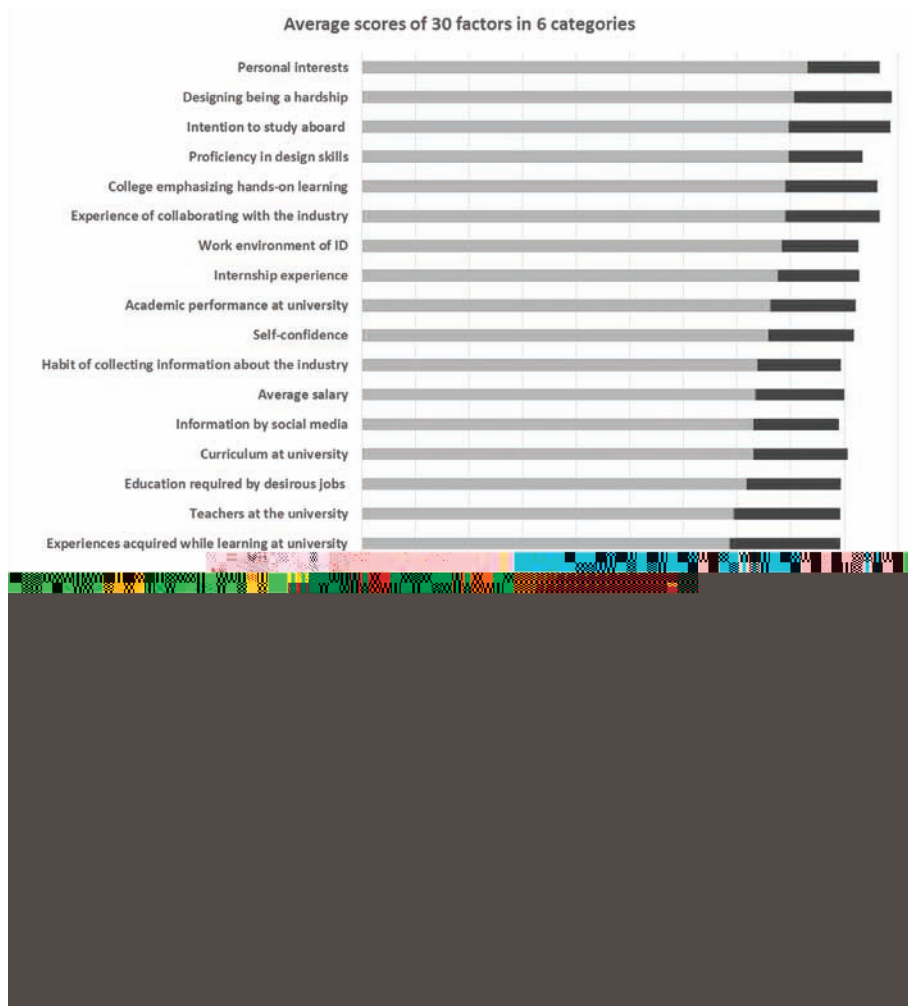


Figure 1: The means and SDs of 30 factors influencing female ID students' career selection after university graduation.

graduation were ID-profession factors, personal factors, social factors and schooling process. The ID-profession factors tended to be the most important; the results indicate the substantial influence of the characteristics of ID professions on the female students' career selection after university graduation. For example, 'I feel that designing is a hardship' and 'Compared with graduate courses, undergraduate courses in ID emphasize hands-on learning through design tasks' produced high a mean of 4.03 (SD=0.91) and 3.95 (SD=0.86), respectively.

Personal factors tended to be the second important, of which 'my personal interests', produced the highest mean (M=4.16, SD=0.67); this is the first from all 30 questions. This result indicates an emphasis on personal interests and learning desire by the female ID students. They sought to engage in jobs that appealed to their preferences, or study in graduate programmes that were relevant to their interests. In addition, the factors of 'my proficiency in professional ID skills learned at my university', 'my internship or work study experience at university', and 'my habit of searching and collecting information on the ID industry' were important to career selection after graduation.

The category of 'social factors' was ranked third and indicates that factors within the ID work context, including 'the work environment of the job', 'the information provided by newspapers, magazines, or the Internet', 'the average salary in the job market', 'the education level requirement in a job market', and 'To enhance my global view, I want to study abroad after graduating from college', influenced the female students' career selection. 'Schooling process' was ranked fourth and indicates that their schooling processes, which included peers, teachers, academic performance, the curriculum, experiences acquired at university, the advantages and disadvantages of the prestige of a university, and the experience of collaborating with the industry while attending university, had some influence on the female students' career selection.

Except for the factor of 'my self-confidence', with a mean of 3.79 (SD=0.80), other factors within the category of 'factors of female susceptibility' were less important to female ID students generally when making career choices. When making career choices, the factors of 'parents' vocations, education level, and expectations', in the category of 'family background', were less important to female ID students generally.

What are female ID students' career decisions after graduation from university?

The distribution of the female ID students' career choices after graduation are discussed as follows: the percentages of all respondents: deciding to work (42.4%),

Influential Factors	Question amount	Mean	SD	Ranking
Personal Factors	4	3.93	0.196	2
Family Background	6	2.47	0.357	6
Schooling Process	7	3.53	0.301	4
Social Factors	5	3.76	0.175	3
ID-profession Factors	2	3.99	0.057	1
Factors of Female Susceptibility	6	2.73	0.622	5
	30	3.40	0.646	

Table 5: The means and SDs of six major factors that influence female ID students' career selection after university graduation.

intending to do further study (21.6%), planning to work then study (19.9%), and undecided (13.2%). In which the percentages of those planning to work: want to work in the ID sector (24.9%), work in other design sectors (61.6%), and work in unrelated area (13.5%). (A total of 133 respondents of the 177 who chose to work [75%] either wanted to work in design sectors other than ID or non-design sectors, which was substantially more than those who wanted to work in the ID sector.) The percentages of those planning to study: study ID (43.3%), study design (44.4%), and study unrelated field (12.2%). (Of the 90 respondents who chose to pursue graduate study, 51 [57%] either wanted to study in design institutes other than ID or non-design institutes, which was significantly higher than those who wanted to study ID.) And the percentages of planning to work first then study: study ID (15.7%), study design (22.7%), study an unrelated field (10.8%), and will make the decision after I work (45.8%) (Of the 83 respondents who chose to work before entering graduate school, 38 [46%] either wanted to work in design institutes other than ID or non-design institutes, which was significantly higher than those who wanted to study ID [15%]).

We used the mean of vocational maturity of all the respondents, 3.54, as a criterion; those scores higher than the mean were regarded as having a generally positive score on the items related to vocational maturity. A total of 189 respondents exceeded the criterion and, excluding seven respondents who did not provide answers, 182 samples were valid (44.9%). Of the samples, 8.2% had not decided if they wanted to work, study, or work then study after graduation. A total of 228 respondents produced scores of less than 3.54. Excluding five respondents who did not provide answers, 223 responses were valid (55.1%). 17.9% of those respondents have not decided if they want to work, study or work-then-study after graduation. Therefore, the percentage of those not-yet-decided is lower in those who have higher vocational maturity. In other words, those with a higher level of vocational maturity were more likely to have an idea of what they wanted to do after graduation.

CONCLUSION AND SUGGESTIONS

A total of 417 female ID students from 24 departments belonging to 23 Taiwanese universities participated in this survey. The methodology employed in this research has some limitations, mainly the issues of representativeness and generalizability. For example, the limitations of convenience sampling include that suitable candidates did not have an equal chance to take part in the survey, and therefore the findings may not be fully generalizable to the target population (female ID students in Taiwan). Also, bias could creep in because there may be systematic reasons why certain types of students were not available at the times when the survey was administered. Consequently, the findings may be more tentative than assertive and the extrapolation of these findings to other domestic or overseas universities may not be effective. However, several implications for design education and further studies can be drawn based on the results of this study. The results are summarized as follows.

- The degree of vocational maturity for the female ID students was generally positive, with an overall mean score of 3.54 (on a five-point Likert scale).
- Frequently, the interest in ID upon entering an ID department could not be sustained until graduation. The ID-profession factor is the most important in the decision by female students to major in ID, which has the highest mean ($M=3.47$); the cause is likely to be the attractiveness and

robustness of courses and way of thinking offered in ID programmes. The category ranked the second highest was personal factors, of which 'my personal interests' tended to be the second most important in the female students' decision to select ID departments. However, the female students, after three to four years of education, were influenced negatively by the ID-profession factor. For example, they felt that jobs in the field of ID involve difficult and fatiguing work. However, we need to collect more data in subsequent studies to support this inference.

- Of the female ID students who planned to enter the job market immediately after graduation, 75 per cent intended to find jobs in non-ID fields, significantly larger than that of who wanted to pursue ID jobs. We maintain this phenomenon noticeable for Taiwan's ID education. However, we do not intend to claim that it is a failure of ID education. Rather, we value ID students being educated with multiple abilities that can be used in a variety of vocations. In a larger sense, undergraduate education in Taiwan's universities is transforming out of training professional skills. Meanwhile, the way designers solving problems and their form-making competences are becoming essential to many job fields. We design educators should be excited to see ID graduates applying their transferable skills to non-ID fields. How faculty of ID education accommodates to this new situation and adjusts curriculum the worth further research.
- The survey revealed that the degree of 'information application' for female ID juniors was significantly higher than that for seniors. Further research is needed to approve if the degree of vocational maturity for female ID students increase with the year of study in university.
- Those with a high maturity level related to vocational choice were less likely to choose 'undecided about entering the job market or pursuing graduate study after college graduation' in the questionnaire, suggesting that high maturity levels may increase the certainty of career selection after graduation.

Because of the current Taiwanese educational system, most high school graduates must select their specific university major prior to enrolment. If the students cannot understand themselves and the contents of the specific departments in universities, the outcomes will be inconsistent with their interests and expectations. Consequently, transferring to another major during college, withdrawing from school or switching fields after graduation may occur. We present several suggestions for design education programmes, female students majoring in ID and people who want to engage in subsequent research.

The outcomes of this study showed a significant proportion of women intend to work outside of ID, possibly due to an overly negative view of ID as an industry. After the students enter the ID programme, the department can ask students to complete the questionnaire developed for this study. The department may further assist students in achieving low vocational maturity and career certainty by providing them with systematic and updated information on the ID profession, such as job titles, work content, core competencies and salaries. Therefore, ID students with diverse backgrounds can plan their future careers accordingly, based on their interests and aptitudes. To foster female ID students' independence and certainty regarding career selection, design-education providers should assist female students in enhancing their self-understanding and the maturity of career selection. They should also

employ more female faculty members to assist female ID students in planning their careers and understanding the job content and lifestyle of industrial designers, as well as evaluate the effect of the job content and lifestyle on taking care of a family. The female faculty members can further offer students career consultation and role models.

Regarding subsequent studies, we present the following suggestions. In this survey, the number of juniors in the sample was 1.7 times that of seniors. Therefore, the sample numbers should be more evenly distributed, and freshmen, sophomores and graduate students should be included. Male students or ID students from other countries can be recruited for future studies. Furthermore, questions for understanding the reasons behind students' career selection can be included.

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Article

Enhanced Co-Worker Social Support in Isolated Work Groups and Its Mitigating Role on the Work-Family Conflict-Depression Loss Spiral

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Abstract: This paper examines a loss spiral model (*i.e.*, reciprocal relationships) between work-family conflict and depression, moderated by co-worker support. We expected that the moderation effect due to co-worker support would be evident among those working in isolation (*i.e.*, mining workers) due to a greater level of intragroup attraction and saliency attributable to the proximity effects. We used a two wave panel study and data from a random population sample of Australian employees ($n = 2793$, [$n = 112$ mining, $n = 2681$ non-mining]). Using structural equation modelling we tested the reciprocal three way interaction effects. In line with our theory, co-worker support buffered the reciprocal relationship between WFC and depression, showing a protective effect in both pathways. These moderation effects were found in the mining industry only suggesting a proximity component moderates the social support buffer hypothesis (*i.e.*, a three way interaction effect). The present paper integrates previous theoretical perspectives of stress and support, and provides insight into the changing dynamics of workplace relationships.

Keywords: depression; work-family conflict; social support; mining

1. Introduction

1.1. Social Support and Work-Family Conflict among Remote Workers

Social support is typically sought from and provided by primary groups: friends, family members and partners. Different types of primary group support, in particular spousal support, have been shown to be predictive of outcomes of life satisfaction as well as positive and negative mood [1]. Social support has also been theorized as a key moderator of the experience of stress in both the psychology [2–4] and sociology literature [5–8]. It therefore plays an important role in dealing with daily stress, such as the stress from work, through the informal support structures typically offered by partners, friends and family.

However, a recent trend in the work arrangements adopted by primary resources industries may restrict the availability of these support networks. Fly-in/Fly-out (FIFO) rosters, where a worker is flown to a remote worksite to stay and work for a period of days and return home for rest days, has become a prevalent strategy for remote employment in the mining industry as well as offshore oil and gas industries. FIFO rosters have become especially popular among Australian mining employers, due to the great distances between coastal urban populations and inland mining sites. Employees, particularly those with partners and children, prefer FIFO contracts over relocating to

mining communities that are closer to mining sites but these lack the infrastructure of Australia's major urban populations.

This relocation however restricts both the support a worker can receive from primary groups, as well as the support they too can offer. This would suggest that Australian mining workers, in particular those on FIFO contracts, will experience greater conflict between their work and family domain. Recent research in the Australian Workplace Barometer project supports this, with mining workers reporting the highest rates of work-family conflict across all Australian industries [9]. Work-family conflict has been theorized as a construct that elicits a stress response (a stressor) [10], which can lead to impairments in psychological health such as depression, and also a product of stress [11]. In this regard, the relationship between work-family conflict and psychological health may be bidirectional. Problematically, remote mining workers do not have access to their primary support networks that are important for buffering this stress process. However, in the absence of their typical support networks, we drawn on the *proximity principle* to suggest that remote mining workers will seek social support from those around them on site, *i.e.*, their co-workers. In the present paper, we therefore propose that a bi-directional relationship between work-family conflict and depression will be mitigated by co-worker support among mining workers.

1.2. Work-Family Conflict and Mental Health

Work-family conflict is associated with a myriad of psychological health impairments. Work-family conflict, also referred to as *work-home conflict* is an antecedent of psychological health including outcomes such as depression [10,12], wellbeing [13], burnout [14], and exhaustion [15]. We can explain this phenomenon through the stressor-strain process: the experience of work-family conflict elicits stress in an individual that if not addressed leads to psychological strain related outcomes, *i.e.*, a decline in psychological health and wellbeing. This process is an underlying assumption in contemporary work stress theories in psychology such as Karasek's Job Demand Control Model [3] and more recently Demerouti and Bakker's Job Demand Resources model [4], as well as popular sociological theory on stress such as Pearlin's stress-process model [16].

Conversely, there is also evidence to suggest that conflict between work and family domains can be an *outcome* of stress. Research by Kelloway, Gottlieb, and Barham [11] found that an increase in work-family conflict was significantly predicted by the perceived psychological stress of employees. One explanation Kelloway, *et al.* propose is that our personal resources (*i.e.*, emotional and physical energy) are depleted in response to stressors, which in turn leaves us with inadequate resources to cope with the conflict between work and family life. Moreover a meta-analysis by Allen, Herst, Bruck and Sutton [17] found work-family conflict predicted stress and stress-related outcomes. This incongruence could be evidence of bidirectional relationship between stress-related outcomes (such as generalised stress, or specific impairments like depression) and work-family conflict, where initial conflict acts as a stressor eliciting strain, which in turn depletes resources that are also needed to address the conflict between the work and family domain.

Adding support to this proposition, Demouriti, Bakker and Bulters [15] explicitly explored work-family conflict as a stressor and strain outcome concurrently. They found that work-family conflict interacted with emotional exhaustion in a negative spiral similar to Hobfoll's [18] loss spiral theory. According to Hobfoll, a person's resources are taxed when addressing stressors. Once a person's resources are low, they are then less equipped to deal with subsequent stressors, and consequently less equipped to address the initial stressor at its next occurrence. In this sense, resources are depleted in "loss spirals" and conversely can be gained in "gain spirals". Similarly, Demouriti *et al.* [15] argued that a person who is exhausted would have insufficient energy to address work-family conflict, which in turn acts as an additional source of strain, creating more exhaustion in a loss spiral. These findings echo previous work by Leiter and Durop [19] who similarly found a reciprocal relationship over time between work-family conflict and exhaustion.

Considering the loss spiral found by Demouriti *et al.* [15] a similar spiral is plausible with other strain-related outcomes that relate to heightened levels of work-family conflict, such as depression [10,12]. We propose that a person experiencing depression will have insufficient energy to address conflict between work and home, which will in turn act as a source of stress further exacerbating depression. We therefore we hypothesize:

Hypothesis 1: Depression increases the level of work-family conflict (model a, Figure 1).

Hypothesis 2: Work-family increases the level of depression (model b, Figure 1).

1.3. The Social Support Buffer Hypothesis

In the absence of their usual support network of friends, family and partners, remote mining workers may be at a greater risk of strain-related health outcomes that arise from the experience of stressors. Within the literature of psychology, social support is regarded as a critical resource in protecting mental health, and has been argued to act as a *buffer* of psychological stress in the prominent work of research contemporaries such as Cohen and Wills [2], Karasek and Theorell [3] and Bakker and Demerouti [4]. In one of the earliest papers to discuss the social buffer effect, Cohen and Wills proposed social support may function as a coping mechanism against an elicited stress response by preventing the initial stress appraisal, in light of the available peer support. They also proposed that social support may aid in preventing the stress response by functioning as a resource that provides alternate means to address the stressor. Adding additional support Frese [20] observed the support buffering hypothesis—that is, the buffering effect of social support against stress—amongst a range of different stressors (e.g., physical and psychological) and outcomes (e.g., depression and anxiety) with different forms of support (e.g., co-worker and spousal).

Similar perspectives of stress and support are proposed in the sociology literature, but provide additional qualitative perspectives on the mechanism through which the stress response occurs. Pearlin's [16] *stress process model* proposes that the stress response that arises from the experience of a stressor can lead to negative self-appraisal, affecting self-esteem and our sense on control of life events. Pearlin proposes that through this mechanism, poor mental health, in particular depression, can arise. Further, social support has been argued to play a vital role in protecting mental health in buffering the stress process in Pearlin's model [5–8]. Social support has been argued to buffer the stress response in that support networks provide resources to cope with the occurrence of stress. Together these perspectives not only reflect theoretical convergence across disciplines, but a complimentary account of the stress and social support experience. We hereon refer to this process as the *social support buffer hypothesis*.

However, in the absence of their usual support network, it is plausible that remote workers will seek social support from their co-workers. We offer two theoretical perspectives to support this proposition. First, the proximity principle suggests remote mining workers will be at a greater disposition to seek social support from co-workers in the absence of friends and family. In the field of social psychology the proximity principle refers to the increased likelihood of people forming social bonds and establishing group cohesion when they are in frequent physical contact. Since the 1960s research has investigated the phenomenon in terms of geographical proximity, largely in studies of friendship formation amongst university students living in campus boarding facilities [21–23], but the theory has also been investigated in terms of interpersonal similarity as a form of proximity [24]. Proximity in university dorm-rooms was additionally associated with increased disclosure [23], which may facilitate supportive discussion. This finding would suggest that workers in isolated environments such as remote miners, who have more social interactions with co-workers than typical, and less with friends and family at home, are increasingly likely to receive and rely upon social support from their co-workers.

Second, more alleviative co-worker social support in isolated workplaces could also be explained by processes of self-categorisation. According to self-categorisation theory [25], the personalities of members of a collective are influenced by the behaviours and social norms of that group. These

prototypical behaviours of the group form a “social identity” for the individual. Prototype behaviours typically are those that emphasise characteristics of the group as well as behaviours that differentiate group members from other groups. For example, a person working in the agricultural industry may wear clothing that reflect his profession outside of work, that both associate him with the agriculture industry as well as distinguish him from a person in an office job role. Reflecting prototype behaviour enhances group saliency, intragroup social attraction and overall group cohesion [26]. The greater frequency that remote mining workers interact should therefore result in a greater number of prototype behaviours and a stronger social identity, and consequently, greater intragroup cohesion and stronger social relationships. Self-categorisation theory, therefore, provides an additional explanation for strengthened social relationships amongst remote mining workers, which should in turn buffer strain. Both of these theoretical perspectives support the notion of a proximity component to social support, which we propose will result in a social support buffering effect among a mining cohort. We therefore propose:

Hypothesis 3: Co-worker support amongst mining workers reduces or buffers the bidirectional relationship between work-family conflict and depression.

The following model is proposed to test our hypotheses:

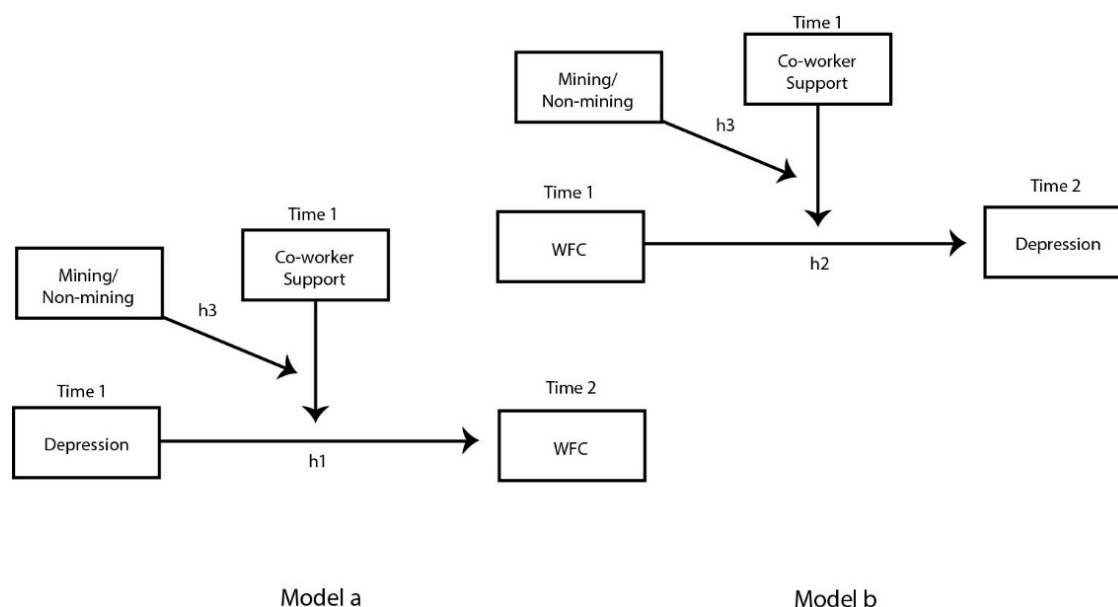


Figure 1. Buffering hypothesis of a Work-Family Conflict/Depression loss spiral. WFC = Work-Family Conflict; h1-3 indicate hypotheses tested.

1.4. Aims and Significance

This paper aims to construct a model that unifies two predominant perspectives within the literature, the social support buffer hypothesis and loss spiral theory. Further, we elaborate on the social support buffer hypothesis by exploring the environmental factor of workgroup proximity, which should mitigate the efficacy of social support according to the proximity principle, and self-categorizing processes. The inclusion of mining as a group factor has additional important practical implications for industry. The mining industry plays a vital component of world economies, in particular the mineral-driven economies of Australia, South Africa, Canada, Russia, and the United States.

Examining depression has potential practical implications for industry practices as well. Depression is associated with memory [27] and decision-making [28] impairments. With the high rates of traumatic workplace injuries in the mining industry [29], research that can inform strategies to alleviate stress-related illnesses with cognitive correlates stands to improve site safety, as well

as staff wellbeing. Additionally, depression is associated with several productivity factors such as presenteeism and sickness absenteeism, that have financial implications for the employer [30,31]. Considering these safety and performance correlates, this study may be beneficial in improving our understanding of the pathways of work-related stress, to inform organisational policies and practices, and in turn improve the health of employees, companies, and their related economies.

2. Methods

2.1. Procedure and Participants

This study uses survey data collected as a part of nation-wide surveillance project of work stress factors, the Australian Workplace Barometer project. We used a repeated measures design across two time points of data collection with a 12-month time lag, between 2009 and 2010 from New South Wales and Western Australia, and between 2010 and 2011 for South Australia. Ethics was obtained from the University of South Australia's Human Research Ethics Committee. The sample consisted of 2793 (48.3% male, 51.7% female) working Australians between the ages of 18 and 85 who completed the survey at both time points. Within our sample 112 (83.9% male, 16.1% female) were identified as working in the mining industry which was used to create the dichotomous variable regarding whether they were mining workers or not (see measurement description below).

Telephone interviews were conducted with participants. To recruit participants, phone numbers were randomly selected from the Australian white pages telephone directory for each state. After contact was made, the interviewer asked to speak to an employed member of the household over 18 years of age and who had the most recent birthday. It was this individual who was then invited to participate.

2.2. Measures

Depression was measured using the nine-item Patient Health Questionnaire (PHQ-9). The nine items reflect the criteria for Major Depressive Disorder used in the DSM-IV [32] e.g., "During the last month, how often were you bothered by feeling down, depressed or hopeless?" Responses range from 0 (not at all) to 3 (nearly every day). Work-Family Conflict was measured using Netemeyer, Boles and McMurrian's [33] five-item measure. Items reflected the negative spill over from work into the family domain, e.g., "My job produces strain that makes it difficult to fulfil family duties". Responses were made on a seven point Likert type scale ranging from 1 (strongly disagree) to 7 (strongly agree). The fifth item was removed due to poor factor loading.

Co-worker support was measured using the co-worker support subscale from the Job Content Questionnaire 2 [34]. The measure of co-worker support consisted of 3 items, e.g., "I am treated with respect by my co-workers". Participants responded on a 4 point Likert type response scale ranging from 1 (strongly disagree) to 4 (strongly agree).

Participants reported the industry they worked within, giving responses classified under the Australian and New Zealand Standard Industrial Classification (ANZSIC). These responses were recoded into a dichotomous measure indicating whether or not the participant worked within the mining industry (2) or not (1).

2.3. Data Analyses

Using MPlus version 6.11 [35], a Structural Equation Model (SEM) was conducted using a full two-wave panel design. Missing responses were replaced by the series mean of participant scores. To test Hypothesis 1 and 2: four models were constructed: a stability model; model a (WFC, Co-worker Support, Mining → Depression); model b (Depression, Co-worker Support, Mining → WFC) and a reciprocal model (a and b).

Once the model with the most appropriate fit was established, the interaction terms were added to the model to test hypothesis 3 (the moderating effect of co-worker support amongst mining workers).

When modelling interaction effects in SEM, standard fit indices are inapplicable. Therefore alternative measures of fit, The Akaike Information Criterion (AIC) and the Sample-Size Adjusted Bayesian Information Criterion (SABIC) were examined to measure the fit of the interactions added to the reciprocal model. See Little, Bovaird and Widaman [36] for a discussion on the use of fit indices when modelling interaction terms. We chose to use SEM for our analysis because it allowed us to test both causal models simultaneously, as well as allowing us to model the additional complex interaction terms.

3. Results

3.1. Descriptives

Before conducting the analysis, means, standard deviations, Cronbach's alphas (Table 1) and correlations (Table 2) were computed. All variables showed satisfactory internal consistency (between 0.81 and 0.90). Both WFC and depression had a test-retest reliability of >0.50 , and co-worker support of >0.30 . These reliability coefficients were all statistically significant and of typical stability for this type of research.

Table 1. Means, standard deviations (SD) and Cronbach's alpha (α) for Australian employees.

Measure	Mean	SD	α
1. Co-worker support 1	9.79	1.29	0.87
2. Co-worker support 2	9.70	1.20	0.88
3. WFC 1	14.51	6.94	0.90
4. WFC 2	14.41	6.64	0.90
5. Depression 1	3.46	3.72	0.81
6. Depression 2	3.21	3.50	0.82

Mean-centering was conducted in the analysis before generating interaction terms. Numbers after variable name indicate time wave. $N = 2793$.

Table 2. Correlation matrix of study variables for Australian employees.

Measure	1	2	3	4	5
1. Co-worker support 1	—				
2. Co-worker support 2	0.31	—			
3. WFC 1	−0.06	NS	—		
4. WFC 2	−0.05	−0.05	0.60	—	
5. Depression 1	−0.10	−0.06	0.28	0.22	—
6. Depression 2	−0.08	−0.08	0.21	0.28	0.53

NS indicates non-significant correlations; otherwise all other statistics are significant to 0.05 or less. $N = 2793$.

3.2. Analysis

Table 3 shows the comparative models tested: model a, model b, as well as testing both models simultaneously. It should be noted that in all four models, the chi square values were significant. This is nearly always the case for large models with large samples (400 or more cases) in which case researchers should rely on fit indices for model interpretation [37]. The fit indices (RMSEA, TLI and CFI) were sound for each model tested, however the reciprocal model yielded a lower chi square indicating it was a better overall fit, supporting Hypotheses 1 and 2. Interaction terms were then added to the reciprocal model.

Table 3. Main effects and fit indices for study models over time for Australian employees.

Model	Main Effects	B	p	χ^2	df	p	RMSEA	TLI	CFI
1. Stability model				2595.29	469	<0.001	0.040	0.944	0.950
2. Model a	WFC → Depression	0.01	<0.001	2584.35	465	<0.001	0.040	0.943	0.950
	Co-worker Support → Depression	−0.02	ns						
	Mining → Depression	0.03	ns						
3. Model b	Depression → WFC	0.18	0.02	2584.14	465	<0.001	0.040	0.943	0.950
	Co-worker Support → WFC	−0.01	ns						
	Mining → WFC	0.26	0.03						
4. Reciprocal model	WFC → Depression	0.01	<0.001	2573.59	462	<0.001	0.040	0.943	0.950
	Co-worker Support → Depression	−0.02	ns						
	Mining → Depression	0.05	ns						
	Depression → WFC	0.17	0.02						
	CoSupport → WFC	−0.02	ns						
	Mining → WFC	0.29	0.02						

B = unstandardized beta coefficients. χ^2 = chi square, df = degrees of freedom, p = probability, RMSEA = Root Mean Square Error of Approximation, TLI = Tucker Lewis Index, CFI = Comparative Fit Index. N = 2793.

The inclusion of the interaction terms (Hypotheses 3) yielded a lower AIC (168,315.94) than the reciprocal model (168,323.65) and a SABIC (168,685.13) not notably greater than the reciprocal model (168,684.44), suggesting the inclusion of the interaction terms creates an equal if not better overall model fit. Interaction terms are displayed in Figure 2.

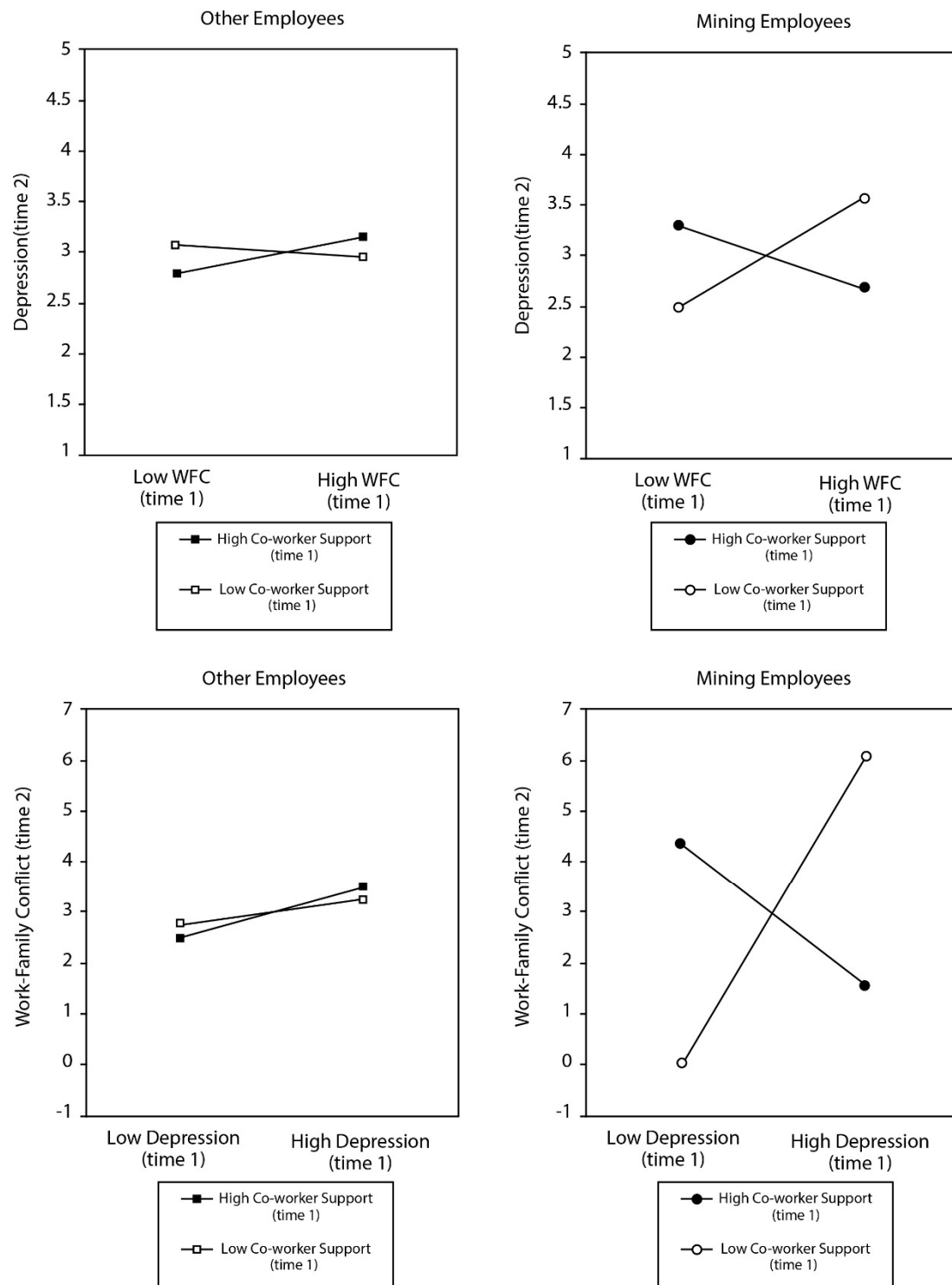


Figure 2. Interaction terms for the moderating effect of co-worker support on the work-family conflict depressive loss spiral in mining and a general work sample in Australia. WFC = Work-Family Conflict.

Figure 3 shows the regression coefficients (B) of the modelled regression paths and correlations of our hypothesized model. Non-significant pathways are represented by dashed lines. Hypotheses 1 and 2 were confirmed, showing that Depression at time 1 significantly predicted an increase in WFC at time 2 ($B = 0.16$), and to a lesser extent WFC at time 1 significantly predicted and increase in Depression at time 2 ($B = 0.01$). The two way interaction was non-significant, showing co-worker support did not moderate the regression path from depression to WFC over time or WFC to depression over time. However, the three way interactions were significant confirming Hypothesis 3, showing mining strongly moderated the interaction of co-worker support on the regression path between depression and WFC ($B = -1.27$) over time and WFC to depression ($B = -0.15$) over time.

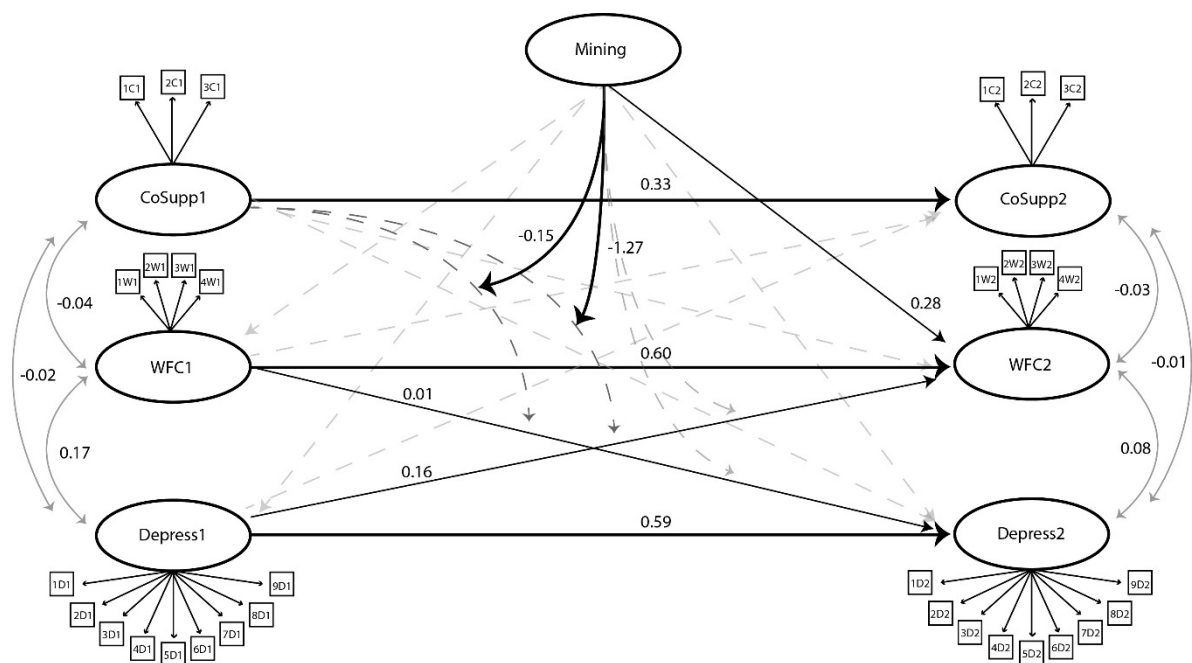


Figure 3. A two wave panel design structural equation model with two and three-way interaction terms. CoSupp = Co-worker Support. WFC = Work-family Conflict. Depress = Depression. Dashed lines represent non-significant main effects.

4. Discussion

The purpose of the present paper was to expand the current theoretical knowledge of stress processes by proposing a unified model of stress by modelling two prominent theoretical concepts simultaneously: loss spiral theory, and the social support buffer hypothesis which is common among psychological and sociological stress theory. Further, we extend the theoretical understanding of social support by exploring proximity effects via the additional interaction of remote work (mining) in this integrated model. Our study hypotheses were supported, finding a reciprocal relationship between depression and WFC, which was buffered by social support only among mining workers. Theoretical and practical contributions are discussed.

First, in finding a reciprocal relationship between work-family conflict (WFC) and depression this paper adds to the emerging body of research on Hobfoll's [18] growth and loss spiral theory, which has implications for current stress process perspectives. In particular, this finding helps account for a gap in current stress process perspectives, as loss spiral theory could explain the incongruity in previous research regarding WFC's role as either a stressor or an outcome of stress. Loss spiral theory suggests WFC can act as both a cause and outcome of stress. Personal resources are depleted in addressing the stress caused by WFC, which leads to insufficient resources to respond to another stressor (*i.e.*, depression). Resources are further taxed to respond to that stressor, which results in less resources

respond to WFC in the future, creating a loss spiral. Similarly depression functions as a stressor as symptoms of depression (such as lethargy and anhedonia) make it difficult to engage in both work and social roles. Personal resources are depleted in addressing this elicited stress, leading to insufficient resources to address the experience of WFC. Hobfoll's theory suggests that unidirectional assumptions on the experience of stress may not always be correct, and therefore the current prevailing perspectives on the stress process (*i.e.*, the Karasek's JDC theory [3], Bakker's JDR theory [4] and Pearlin's stress process theory [16]) could be expanded to account for reciprocity between stressors and stress outcomes.

There are also considerable implications of the two way interactions being non-significant and the three-way interactions being significant (Hypothesis 3). Our findings suggest that co-worker support significantly acted as a buffer of work-family conflict within the mining working population, but not significantly in the general working population. This supports our hypothesis that there is a proximity component to the buffer hypothesis, that proximity mitigates the efficacy of social support. Extrapolating on this hypothesis, not only does proximity enhance the effect of social support, but the antithesis seems to also be evident, in that distance appears to be deleterious on social relationships. This is evident in a significant pathway between mining at Time 1 to work-family conflict at Time 2 ($B = 0.28$).

These findings may serve to explain the incongruent findings for and against the social support buffer hypothesis present in the literature. Although several studies have found small to moderate support for the buffer hypothesis among work cohorts [20,38,39], several studies have found no effect [40,41]. As outlined in the introduction, we believe that the increased proximity that mining colleagues experience, who are often on FIFO or similar contracts, enhances the social cohesion amongst co-workers and the strength of their social bonds, therefore enhancing the protective strength of social support as a buffer. It is plausible that cohorts used in previous research differed in both intra-group proximity, which will affect the efficacy of co-worker social support in alleviating stress.

There is the additional possibility that part of the moderation could be attributed to gender effects. Ystgaard, Tambs and Dalgard [42] found the social support buffer present amongst male adolescents but not female. Ystgaard *et al.* speculated that this gender difference may be attributable to traditional gender roles: that male friends will disperse more problem solving advice and that female friends will provide a more passive support role, and that the former may be more effective. As the 83.9% of the mining worker respondents were male, a larger male population could explain the relationship. To rule out this possibility, we conducted a post-test analysis replicating model using gender instead of mining as the third interaction term. The relationship was shown to be non-significant at both model a. and model b., adding further support to our hypotheses.

A practical implication of these findings is that a means for minimising the WFC-depression loss spiral is identified for mining workers, and may also be generalizable to other isolated working populations. Organisational policies and practices that foster supportive and cohesive co-worker relationships may be able to help minimise depression and WFC. Considering the associated productivity cost deficits associated with depression [31], there may be considerable financial benefits by co-worker support targeted organisational practices. Further, mining workers represent a critically under-examined population in terms psychological health despite their contribution to substantial economies. This paper therefore contributes to a gap in empirical research which has been noted in previous literature [43].

While the two-wave design enabled reciprocal relationships to be examined over time, a third time wave would have more definitively elucidated the changes in these relationships over time. It is also possible that the period of at home and away time experienced by remote workers could affect the degree of conflict between the work and family domain, as the length of FIFO rosters can vary considerably. Additionally, factors such as telecommunication facilities (*e.g.*, phone reception and internet services) and the remoteness of the workplace could also affect the experience of work family conflict. By examining these additional work context variables, future research could identify which workplace factors are more pertinent to the experience of work-family conflict amongst remote workers.

Another limitation was that the number of mining workers on FIFO contracts, was not identifiable. It is possible that those on FIFO contracts may experience a greater reliance on co-worker support than those living in neighbouring communities. However, it is likely that those that were not on FIFO contracts still experience remoteness as they live away from major urban populations, and still work similar hours. Further, the supportive culture that arises due to FIFO rosters is likely to spill-over to non-FIFO employees who they work with. Future research should explore the effect of roster type and length to see if this affects employee's experience of co-worker support. A larger sample of mining workers would also be beneficial to obtain ample power to explore these roster-related effects on the experience of co-worker support.

5. Conclusions

In conclusion, the present paper offers a unification of stress process perspectives, and challenges unidirectional assumptions between stressors and strain-outcomes. Additionally the unique role of proximity may explain previous discrepancies in the literature, and therefore warrants consideration in future research design. As the way that we work changes, the effects that these changes have on our social relationship both at home and at work, warrants increasing attention.

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PARENTAL MODEL AS CORRELATES OF VOCATIONAL MATURITY IN ADOLESCENTS

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ABSTRACT

The present study aims to study the impact of parental modelling on the vocational maturity of the adolescents. The sample of 60 adolescents (30 boys and 30 girls) were the students from various streams studying in high school. The study revealed that there is no significant impact of various aspects of parental modelling and vocational maturity of adolescents. Now a days the education has become industrialised and it appears that adolescents vocational maturity is not affected by the parental modelling as they attain much of the information from the professionals outside their families. Also, the gender biasness has decreased to a great level.

KEYWORDS: Parental Modelling, Vocational Maturity, Parenting, Child Rearing, Adolescents, Adjustments.

INTRODUCTION

Vocational maturity is the ability to make appropriate occupational choices that fit the subject's abilities, occupational interests and occupational preferences. Because of this maturity long term vocational adjustment is considered to be more likely.

Parenting (or child rearing) is the process of promoting and supporting the physical, emotional, social, and intellectual development of a child from infancy to adulthood. Parenting refers to the aspects of raising a child aside from the biological relationship.

Parenting effects the vocational maturity in adolescents. There is evidence that parenting does affect the personality development of adolescents. Parental issues at this stage of parenting include dealing with "rebellious" teenagers, who didn't know freedom while they were smaller. Parents are helping, demanding and controlling. Parents helped them solve their problems but side by side also built up their confidence and encouraged them to take independent decisions. Parents perpetually adapted their parenting to fit their children's emerging needs and responded to the ever-changing influence of the society. Parent's emotional expression of love is associated with the children's personality outcomes. If they are caring and loving with less demand, children feel concerned by and wanted by them. Parents loving nature enhances children's self-concept, foster positive social and academic adjustment. It is revealed that parents who are highly responsible and loving are likely to have children who are not socially assertive and highly competent (Baumrind 1978). Parental authoritativeness, openness to adolescents' issues, and concern with promoting career exploration significantly related to the career exploration by their children,

independent of parental educational background and adolescent gender Bärbel Kracke (1997). Psychological separation and parental attachment are related to career maturity separately and simultaneously (Kenneth F. Hughey & Hee-Yeong Lee 2001).

We can also say assume that it also affects the level of maturity of teens. Keeping this in mind the present study aims to study the impact of parental modelling on the vocational maturity of the adolescents.

OBJECTIVE OF THE STUDY

The study was aimed to study the impact of parental modelling on the vocational maturity of the adolescents. The main objectives of the study were-

1. To study parental models in adolescents.
2. To study vocational maturity in adolescents.
3. To study the correlation between parental models and vocational maturity.

METHODOLOGY

Research methodology involves systematic procedures which the researcher starts from initial identification of the problem to its final conclusion. The role of methodology consists of procedures and techniques for conducting study.

The purpose of the study was to study the parental models as correlates of vocational maturity in adolescents.

RESEARCH DESIGN

This study was designed to be descriptive and correlational. Variables under study were-

- a) Dependent variables i.e. Vocational Maturity
- b) Independent Variables i.e. Parental Model

RESEARCH SAMPLE

The study was conducted on a sample of 60 adolescents. The sample of 60 adolescents (30 boys and 30 girls) was the students of various streams in standard 11 studying in various schools.

SAMPLING DESIGN

A convenience sample was used in this study. The inclusion criteria were: voluntarily participating in this study and being 16 - 18 years.

MEASUREMENTS

The following standardized tools were used for the present study:

A. Vocational Maturity Scale – Dr. A.K. Srivastava (Kanpur)

B. Parenting Scale- R.L. Bharadwaj, H. Sharma & A. Garg

PROCEDURE OF DATA COLLECTION

Visits were made to the school by the researcher, so that initial rapport can be established with the respondents. After employing the tools the requisite data was collected and adolescent were assured that the information collected will be used only for research purpose.

STATISTICAL ANALYSIS

Data were analyzed using the Statistical Package for Social Sciences (SPSS) for Window, version 16.0. Statistical methods included mean, SD and t test. The results were considered significant if p value was < 0.05 .

HYPOTHESIS

1. There was no significant difference between the vocational maturity of boys and girls.
2. There was no significant difference between the parenting model of boys and girls.
 - a. There was no significant difference between the parental model dimension i.e. rejection v/s acceptance of boys and girls.
 - b. There was no significant difference between the parental model dimension i.e. carelessness v/s protection of boys and girls.
 - c. There was no significant difference between the parental model dimension i.e. neglect v/s indulgence of boys and girls.
 - d. There was no significant difference between the parental model dimension i.e. utopian expectation v/s realism of boys and girls.
 - e. There was no significant difference between the parental model dimension i.e. lenient standards v/s moralism of boys and girls.
 - f. There was no significant difference between the parental model dimension i.e. freedom v/s discipline of boys and girls.
 - g. There was no significant difference between the parental model dimension i.e. faulty role expectation v/s realistic role expectation of boys and girls.
 - h. There was no significant difference between the parental model dimension i.e. marital conflict v/s marital adjustment of boys and girls.
3. There was no significant correlation between the parental model scores and vocational maturity scores.

RESULTS AND DISCUSSION**TABLE 1****MEAN SCORES OF PARENTING MODEL OF GIRLS AND BOYS**

S.No.	Boys	SD	Girls	SD	T
1.	37.7	3.10	39.3	4.33	-0.565

Although the scores were higher in girls. The mean scores of boys and girls indicate that the parenting does not differ much in the two groups. By conventional criteria, this difference is considered to be not statistically significant at 95% confidence interval. Thus the null hypothesis that there is no significant difference between the parental model of girls and boys is being accepted. There is no difference in the parenting model of both the groups.

TABLE 2**MEAN SCORES OF REJECTION - ACCEPTANCE OF BOYS AND GIRLS**

S. No.		Mean	SD	t
1.	Boys	211	27.1	0.576
2.	Girls	222	33	0.576

The mean scores in rejection vs. acceptance indicate that girls are more accepted as compared to boys. By conventional criteria, this difference is considered to be not statistically significant at 95% confidence interval. Thus the null hypothesis that there is no significant difference between the parental model dimension i.e. rejection vs. acceptance of girls and boys is being accepted. There is no difference in the rejection vs. acceptance dimension of both the groups.

TABLE 3**MEAN SCORES OF CARELESSNESS – PROTECTION OF BOYS AND GIRLS**

S. NO.		Mean	SD	T
1.	Boys	215	9.07	0.352
2.	Girls	213	13.8	0.352

The mean scores of carelessness vs. protection show that parents do not show any difference in protection of boys and girls. However the scores were higher in boys. By conventional criteria, this difference is considered to be not statistically significant at 95% confidence

interval. Thus the null hypothesis that there is no significant difference between the parental model dimension i.e. carelessness vs. protection of girls and boys is being accepted. There is no difference in the carelessness vs. protection dimension of both the groups.

TABLE 4**MEAN SCORES OF NEGLECT – INDULGENCE OF BOYS AND GIRLS**

S. NO.		Mean	SD	t
1.	Boys	253	19.9	0.135
2.	Girls	255	26.6	0.135

The mean scores of neglect vs. indulgence indicate that indulgence of parents with boys and girls develop whims and psychological inconsistencies in the latter as the scores were higher in girls. By conventional criteria, this difference is considered to be not statistically significant at 95% confidence interval. Thus the null hypothesis that there is no significant difference between the parental model dimension i.e. neglect vs. indulgence of girls and boys is being accepted. There is no difference in the neglect vs. indulgence dimension of both the groups.

TABLE 5**MEAN SCORES OF UTOPIAN EXPECTATION – REALISM OF BOYS AND GIRLS**

S. NO.		Mean	SD	t
1.	Boys	218	30.7	0.209
2.	Girls	222	35.6	0.209

The mean scores indicate that parents take into consideration the objective realities and capabilities of boys and girls equally. However the scores were higher in girls. By conventional criteria, this difference is considered to be not statistically significant at 95% confidence interval. Thus the null hypothesis that there is no significant difference between the parental model dimension i.e. utopian expectation vs. realism of girls and boys is being accepted. There is no difference in the utopian expectation vs. realism dimension of both the groups.

TABLE 6**MEAN SCORES OF LENIENT STANDARDS - MORALISM OF BOYS AND GIRLS**

S. NO.		Mean	SD	t
1.	Boys	234	35.3	0.301
2.	Girls	240	27.1	0.301

The mean scores indicate that parents expect more moralistic attitude from girls than boys. By conventional criteria, this difference is considered to be not statistically significant at 95% confidence interval. Thus the null hypothesis that there is no significant difference between the parental model dimension i.e. lenient standards vs. moralism of girls and boys is being accepted. There is no difference in the lenient standards vs. moralism dimension of both the groups.

TABLE 7**MEAN SCORES OF FREEDOM – DISCIPLINE OF BOYS AND GIRLS**

S. NO.		Mean	SD	t
1.	Boys	188	8.02	0.24
2.	Girls	176	12.3	0.24

The mean scores indicate parents allow more freedom to boys and expect girls to be more disciplined. By conventional criteria, this difference is considered to be not statistically significant at 95% confidence interval. Thus the null hypothesis that there is no significant difference between the parental model dimension i.e. freedom vs. discipline of girls and boys is being accepted. There is no difference in the freedom vs. discipline dimension of both the groups.

TABLE 8**MEAN SCORES OF FAULTY ROLE EXPECTATION- REALISTIC ROLE EXPECTATION OF BOYS AND GIRLS**

S. NO.		Mean	SD	t
1.	Boys	228	21.8	0.433
2.	Girls	234	24.8	0.433

The mean scores indicate that girls show higher scores in realistic role expectation than boys. By conventional criteria, this difference is considered to be not statistically significant at 95%

confidence interval. Thus the null hypothesis that there is no significant difference between the parental model dimension i.e. faulty role expectation vs. realistic role expectation of girls and boys is being accepted. There is no difference in the faulty role expectation vs. realistic role expectation dimension of both the groups.

TABLE 9

MEAN SCORES OF MARRIAGE CONFLICT- MARRIAGE ADJUSTMENT OF BOYS AND GIRLS

S. NO.		Mean	SD	t
1.	Boys	265	26.4	0.780
2.	Girls	276	17.2	0.780

Although the scores were higher in girls but the mean scores indicate high scores in marital adjustment of boys and girls. By conventional criteria, this difference is considered to be not statistically significant at 95% confidence interval. Thus the null hypothesis that there is no significant difference between the parental model dimension i.e. marital conflict vs. marital adjustment of girls and boys is being accepted. There is no difference in the marital conflict vs. marital adjustment dimension of both the groups.

The correlation was found to be 0.05116899571691148. This means there is zero relation or absolutely no relationship. Thus the null hypothesis that there is no significant correlation between the parental model scores and vocational maturity scores is being accepted.

CONCLUSION

The study revealed that there is no significant difference between the parental modelling and vocational maturity of adolescents. Now a days the education has become industrialised and adolescents go for higher studies away from their home so the parenting does not affect the adolescents much and also the gender biasness has decreased to a great level.

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VOCATIONAL MATURITY OF SENIOR SECONDARY SCHOOL STUDENTS IN RELATION TO THEIR FAMILY ENVIRONMENT

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Abstract

This study examines the vocational maturity of senior secondary school students in relation to their family environment. The sample of the study comprised of 100 eleventh class students (50 boys and 50 girls) studying in government and private school of Chandigarh. Descriptive survey method was employed to collect the data. The major findings of the study revealed significant difference in vocational maturity of female students studying in government and private schools. Further, it indicated that vocational maturity level of students with high family environment was significantly higher than the students with low family environment.

Keywords: Vocational Maturity, Family Environment



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INTRODUCTION

In 21st century, we seem to merge towards a new phase in the development of education system in a new perspective, where content and process of education will be direction to help the individual to discover, develop and train one's talent and abilities leading to personal and nation's development and prosperity. Since, no two individuals are alike. There are lots of differences in their behaviour, aptitude, intelligence, personality, and interests as well as in maturity. Maturity of individuals can be different types as physical maturity, cognitive maturity, emotional maturity, relationship maturity and vocational maturity etc

Vocational maturity is the ability to make appropriate occupational choice that fit the subject's abilities, occupational interests and occupational preference. Because of this maturity long term vocational adjustment is consider. So the vocational maturity is relation with different environment. Among the entire environment, family environment is the first environment to influence the vocational maturity of students. According to Crites (1976) vocational maturity is central to development approaches to understanding career behaviour and involves an assessment of an individual's level of progress in relation to his or her career relevant development task.

Family environment is a combination of two words- Family and Environment. Family is a miniature form of society. It is a social institution through which our social heritage is transmitted. Much of what we used to call heredity is actually the influence of the family in interpreting people, customs, attitude and associating them individual and group reactions, ways of thinking ways of doing, ways of acting. So, family climate stands for all those circumstances which are asserting their influence on the child since conception to death. Bhardwaj (2001) considers family as the first unit with which the child has continuous contact and it is also the most powerful medium through which value systems develop.

Dimensions of Family Environment

The family environment has following three dimensions and sub parts:

1. Relationship dimension:

- Cohesion: - Degree of commitment, help, and support family members provide for one another.
- Expressiveness: - Extent to which family member are encourage to act openly and express their feeling and thoughts directly.
- Conflict: - Amount of openly expressed aggression and conflict among family members.
- Acceptance and caring: - Extent to which the member are unconditionally accepted and degree to which caring is expressed in family.

2. Personal Growth Dimensions:

- Independence: - Extent to which family member are assertive and independent make their own decision.

- Active Recreational orientation: - Extent of participation in social and recreational activities.

3. System maintenance dimensions:

- Organization: - Degree of importance of clear organization structure in planning family activities and responsibilities.
- Control: - Degree of limit sets within a family.

OBJECTIVES

The objectives of the study were:-

1. To study and compare the vocational maturity of senior secondary school students studying in government and private schools.
2. To study and compare the family environment of senior secondary school students in government and private schools.
3. To study and compare the vocational maturity of senior secondary school students with regard to gender.
4. To study and compare the family environment of senior secondary school students with regard to gender.
5. To study the vocational maturity of senior secondary school students in relation to their family environment.

HYPOTHESES

The hypotheses of study were:-

- 1) There will be no significant difference in the vocational maturity of senior secondary school students studying in government and private schools.
- 2) There will be no significant difference in the family environment of senior secondary school students in government and private schools.
- 3) There will be no significant difference in the vocational maturity of senior secondary school with regard to their gender.
- 4) There will be no significant difference in the family environment of senior secondary school students with regard to their gender.
- 5) There will be no significant difference in the vocational maturity of senior secondary school students in relation to their family environment.

DESIGN OF THE STUDY

In the present study, descriptive survey method was employed to collect the data. Vocational maturity was dependent variable and family environment was independent variable.

SAMPLE OF THE STUDY

Stratified random sampling technique was employed. The sample was comprised of 100 students of class 11 of two senior secondary schools of Chandigarh. Out of these, 50 students were selected randomly from each government and private schools. Further 25 male and 25 female students were taken from each type of school i.e. Government and Private.

TOOLS EMPLOYED

1. Vocational Maturity Scale by Dr. Manju Mehta (1987)
2. Family Environment Scale (FES) by Dr. Harpreet Bhatia and Dr. N. K. Chadha (1993)

STATISTICAL TECHNIQUE

The obtained data was analyzed by employing t-test

RESULTS AND DISCUSSION

Table 1: Group statistics with regard to vocational maturity and family environment of senior secondary students studying in government and private schools.

Variable	M ₁	M ₂	SD ₁	SD ₂	t value	Level of significant
Vocational maturity	11.080	11.620	2.988	3.762	.795	Not significant
Family environment						
i)Relationship	160.880	158.680	25.868	22.272	.456	Not significant
ii) Personal growth	58.680	58.620	9.065	7.917	.035	Not significant
iii)System maintenance	23.320	22.080	3.883	4.355	1.503	Not significant
Total family environment	242.88	239.380	34.821	30.165	.537	Not significant

Table 1 shows that mean differential with regard to vocational maturity and family environment of senior secondary students studying in government and private school are statistically not significant i.e. Vocational maturity ($t=0.739$) and Family environment ($t=0.537$). This indicates that there is no significant difference in vocational Maturity of senior secondary students studying in government ($M_1 = 11.08.$) and private ($M_2 = 11.62.$) schools. It further indicates that the both government and private senior secondary school students have almost equal level of vocational Maturity. It could be fact that, in today's scenario there is much more

development in educational facilities and advancement in technology. Also, nowadays equal opportunities are given to all the students in government and private school.

Family environment of government and private senior secondary school students is statistically non-significant because the obtained t-values were found to be lower than the table value. t-values in respect of relationship (.456), personal growth (.035), and system maintenance (1.503) and total family environment (0.537). This indicates that there is no significant difference between family environment of government and private senior secondary students. It further indicated that family environment of government and private senior secondary school is almost equal. Hence hypothesis 1 and 2 are accepted

Table 2:Group statistics with regard to vocational maturity and family environment of senior secondary male and female students.

Variable	M1	M2	SD1	SD2	t value	Level of significance
Vocational maturity	10.140	12.560	2.733	3.575	3.802	Significant at 0.01 level
Family environment						
1)Relationship	155.380	164.1800	18.197	28.232	1.853	Not significant
ii) Personal growth	55.920	61.380	6.514	9.339	3.391	significant at 0.01 level
iii) System maintenance	20.920	24.480	3.821	3.710	4.726	Significant at 0.01 level
iv) Total family environment	230.220	250.040	24.738	36.807	2.841	Significant at 0.01 level

Table 2 shows that mean differential with regard to vocational Maturity and family environment of senior secondary school male and female students is statistically significant. Vocational maturity is significant at .01level ($t=3.80$). This indicates that the senior secondary school female students ($M_2=12.56$) have more vocational maturity as compared to senior secondary male students (10.14). This result of the present study could be supported by Luzzo (1995) who also found that female in several age group have higher score on vocational maturity measures than males.

Family environment of male and female students is also found to be statistically significant at 0.01 level of confidence except for relationship, because obtained t-values were found to be greater than the table value. t-value of personal growth (3.391), system maintenance (4.72) and total family environment (2.84) and for relationship (1.853) which is not

significant. This indicates that female senior secondary school students (M_2 w.r.t. relation, personal growth, system maintenance as well as total family environment were 164.18, 61.38, 24.48 and 250.04) have scored higher in family environment as compared to male senior secondary school students (M_1 = relationship, personal growth, system maintenance as well as total family environment were 155.38, 55.92, 20.92, and 230.22). It further indicates that female students' exhibits better family environment as compared to their counterparts. The present results could be due to the fact that female are more attached to their family members than the male students. And also male students are diverting in their character. Hence, hypothesis 3 and 4 are rejected.

Table 3: Group statistics for vocational maturity of senior secondary schools students in relation to their family environment

Dependent variable	Sub independent variable	M_1	M_2	SD_1	SD_2	t value	Level of significant
Vocational maturity	i)Relationship	13.333	10.185	3.497	2.703	3.700	Significant at 0.01 level
	ii) Personal growth	13.333	10.963	3.305	3.322	2.628	Significant at 0.05 level
	iii) System maintenance	13.666	9.185	3.198	2.337	5.878	Significant at 0.01 level
	iv) Total family environment	13.259	9.925	3.459	2.786	3.899	Significant at 0.01 level

Table 3 shows, mean differentials between vocational maturity of students at senior secondary school level in relation to high and low family environment is statistically significant at 0.01 level except for personal growth which is significant at 0.05 level. Because obtained t-values were found to be higher than the table value. t-values for relationship (3.70), system maintenance(5.87) and total family environment(3.89) for personal growth(2.62) which is significant at 0.05 level.. Hence, it indicates that there is significant difference in the vocational maturity of senior secondary school students in favour of students with high family environment. The results of the present study could only be attributed to the fact that, family are the pivot and first agency for child for their growth and development. Family environment can be different in different families. So, maturity level of child also depends upon how their family environment is

congenial and how much their family is supportive. This result was supported by Anshu Narad (2007) who also found significant difference in effect of family environment in vocational maturity of senior secondary students. It further stated that students are innovative in taking decision and parents should provide congenial environment. Hence, hypotheses 5 is rejected

EDUCATIONAL IMPLICATIONS

The study revealed that there is a difference in the level of vocational maturity of student with regard to their family environment. So it is very importance for teachers to know about family environment of students for effective education and for healthy vocational maturity of the students. It is supported by Luzzo (1995) who has found that female in several age group have higher score on vocational maturity measures than males. Anshu Narad (2007) also supported this result. This study suggests that parents and teachers should broaden the mental horizon of the children so that they feel more recognized and accepted in their world and more and more co-curricular activities like debates, declamations should be organized to enhance the vocational maturity of the students.

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Full Length Research

Development of Vocational Attitude Maturity of Secondary School Students in Kashmir: An Evaluative Study

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The present study was carried out to evaluate the vocational maturity of rural, urban, and semi - urban secondary School Students. A sample of 720 students was drawn randomly from Government High and Higher Secondary Schools functioning in various Districts in Kashmir valley. The age of the subjects was 16-18 years. The data was collected with the help of Dr. (Mrs.) Manju Mehta's Vocational attitude maturity scale, Mean, S.D and test of significance were calculated to find out the difference between the mean scores of rural, urban and semi - urban students on vocational maturity.

Key words: Vocational maturity, Rural, Urban, Semi- urban, Secondary students.

INTRODUCTION

Education is the most powerful agency in moulding the character and determines the future of individuals and of nations. It is an integral part and basis of human life, an essential human virtue that develops its intellect and body, fashions and models him for society and transforms him into a social and cultural being. In its most comprehensive sense it aims at storing the mind of its receipt with useful knowledge and training his powers of mind and body to healthful and harmonious action. Researchers have said that education is the most single factor in achieving rapid economic development and technological progress in creating a social order, founded on the values of freedom, social justice and equal opportunity. For this the secondary Education Commission (1952-53) in its report formulated the training of character, development qualities for citizenship in democratic social order, training for leadership and improvement of vocation efficiency as main recommendations.

The important aim of our educational system as per secondary education commission (1952 -53) is to increase the productive and vocational efficiency of our students. Education has always been intimately connected with the world of work. Through the ages man has worked for his livelihood, has learned through accumulated experiences on how to face and control natural forces and how to live within the limited physical resources for the good of all. Vocational education is for productive

purpose, for developing vocational maturity. As the individual seeks and finds new and improved way of working through education or training, he increases his vocational maturity. Vocational maturity is one of the primary construct of vocational psychology, which allows the access to both rate and level of an individual's development with respect to vocational choice. A good system of preparing young people for a wide range of diverse vocations thus call for organized and coordinated integrating vocational education and training. The main aim behind vocationalizing any education is to provide that education and training to students which allows them to continue their best to employ the skill so developed to their own satisfaction as well as towards building up of the society in which they live. This is possible only by developing vocational maturity among students. The secondary education commission has suggested vocational bias to the secondary education. But unfortunately we find that only 12 % of the students who go to the secondary schools take up vocational courses. In other countries, the percentage is 60 - 70. Hence there is need for vocational bias to secondary education.

Need and Importance

In the hands of man, education is a useful weapon. It can work wonders if used rightly. The need of the hour is to

make it society oriented. Only the use of right type of education can help really in the fast changing political and social setup of life whose foundations are laid on democratic philosophy. So the need of hour is to keep education up to the mark and up to date in every aspect. One of its most urgent problems is to improve productive efficiency, to increase the national wealth and thereby to raise appreciably the standard of living of people. Education thus should lay emphasis on vocational maturity and later seems to be productive in contributing the social life of the society. If the individual succeeds in developing himself properly and prepares for a vocation which suits him and in harmony with his all round development, he is able to contribute towards the general economic growth and development.

It is clear that we shall have to formulate our aims with reference to the training of character to fit the students to participate creatively as citizens in the emerging democratic social order and the improvement the students practical and vocational maturity so that these may play their part in building up the economic prosperity of their country. Hence research in areas can be tremendous help to the students for developing vocational maturity. It should therefore be periodically reviewed in the light of the role of secondary education in the total programme of national development, so as to make education relevant to the socio - economic needs of the society. Keeping in view the present scenario of a secondary education and status of the field as a whole, one needs to take a realistic view about the future direction in which secondary education programme must move.

Review of literature indicates the need for secondary education is widely recognized but the status of the secondary education is recommended by secondary education commission that needs to be steadily raised and improved in qualitative terms. Undoubtedly, a good deal of work has been done in this direction but much more needs to be done.

Objective of the Study

In order to carry out the evaluative study meaningfully the following objectives were formulated for the present study.

1. To measure the vocational maturity of secondary school education.
2. To compare rural, urban and semi - urban secondary school students on vocational maturity.
3. To compare rural, urban and semi - urban secondary students on different dimensions of vocational maturity

METHODOLOGY AND PROCEDURES

Seven hundred twenty students reading in 10th and 12th sampling from Government High and Higher Secondary

Schools of the three areas viz, rural, urban and semi - urban of the Kashmir division served as the sample for the present study.

Description of Tools

The tools for the present study were selected in a manner to ensure the accomplishment of objective of the study. The investigator selected following tool for the collection of required data.

Vocational and Interpretation: The data on the basis of objectives set forth were analyzed through various statistical techniques found suitable for drawing for inference and presented with the help of tables. The 't' test was employed in order to measure the significance.,

ANALYSIS AND INTERPRETATION

The analysis and the interpretation of vocational maturity has been done along the following lines:

1. Overall parentage comparison of secondary school students on vocational maturity.
2. Parentage comparison of rural, semi - urban and urban students on vocational maturity.
3. Significance comparison of rural, semi - urban and urban students on vocational maturity.
4. Significance comparison of rural, semi - urban and urban students on various dimensions of vocational maturity.

Vocational Maturity

Table 1 clearly reveals that of all sample secondary school students have the least proportion. 29.02% students has been found to possess poor vocational maturity. 37. 50 % of the students were categorized as average and only 33. 47 % possessed the excellent vocational maturity.

A perusal of Table 2 reveals that the students of the three groups differ on the vocational attitude maturity. On the basis of percentage it has been found that out of 240 rural students (33. 75%) show excellent maturity, (35. 83 %) show average vocational maturity. Likewise out of 240 semi - urban students (33.33%) show excellent vocational maturity, (36-66%) show average vocational maturity. Similarly out of 240 urban students, (33.33 %) show excellent vocational maturity, (40.00%) show average vocational maturity.

Table 2 clearly indicates that the semi - urban student are at par. Both show equal excellent vocational maturity.

Table 3 reveals that out of the groups i.e., rural student v/s, urban students, rural students v/s semi - urban grade identified on the basis of systematic

Table 1. Overall percentage compassion of secondary school on vocational attitude maturity.

NS	Excellent	Average	Poor
720	33.47 (N= 241)	37.50 (N=270)	29.02 (N=209)

Table 2. Percentage comparison of rural, semi - urban and urban students on vocational attitude maturity, with (N=240 in each group).

	Rural	Semi - Urban	Urban
Excellent	33.75 (N= 81)	33.33 (N=80)	33.33 (N=80)
Average	35.83 (N=86)	36.66 (N=88)	40.00 (N=96)
Poor	30.41 (N=73)	30.00 (N=72)	26.66 (N=64)

Table 3. Comparison of rural, semi - urban and urban students on vocational attitude maturity with (N=240 in each group).

S.No	Area	Mean	S.D	t- value	Level of Significance
1	Rural	24.59	4.60	0.17	Not Significant
	Urban	24.65	3.45		
2.	Rural	24.59	4.60	4.33	Sig at 0.01
	Semi - Urban	26.15	3.70		
3.	Semi - Urban	24.65	3.45	5.00	Sig at 0.01

Table 4. Comparison of rural, semi- urban and urban students on vocational aspiration level (N=240 in each group).

Area	Mean	S.D	t- value	Level of Significance
Rural	3.04	1.51	2.66	0.01
Urban	3.84	1.59		
Rural	3.04	1.51	3.3	0.01
Semi - Urban	4.03	1.74		
Semi - Urban	4.03	1.74	1.35	Not Significant
Urban	3.84	1.59		

random students , semi - urban students v/s urban students on vocational maturity, two comparisons have been found to be significant. The mean difference being significant at (0.01) level. Table 3 clearly indicates that the rural students' v/s urban students are almost at par and show no difference on vocational maturity. The mean score favors the semi - urban students (26.15) in comparison to the urban students with mean score (24.65). This implies the semi - urban students are highest on vocational maturity.

A quick look at Table 4 reveals that out of the three groups i.e., rural students v/s urban students, rural

students v/s semi - urban students and semi - urban students v/s urban students on vocational aspiration level, two comparisons turned out to be significant. The table reveals that comparison of rural, semi - urban and urban students differ significantly on influence and money in job choice and the difference being significant at (0.01 And 0.05 level).

The results in Table 5 reveal that out of three groups turned to be significant at (0.05) levels. It has been found on the basis of mean score that rural students in comparison to urban students are almost same on the altruism and passivity in job choice.

Table 5. Comparison of rural, semi - urban and urban students on influence and money in job - choice (N= 240 in each group).

S.No	Area	Mean	S.D	t- value	Level of Significance
1	Rural	3.35	1.48	2.7	0.01
	Urban	3.62	1.68		
2	Rural	3.35	1.48	6.3	0.01
	Semi - Urban	4.98	1.68		
3	Semi - Urban	4.98	1.68	2.57	0.05
	Urban	3.62	1.68		

Table 6. Comparison of rural, semi -urban and urban students on altruism and passivity in job Choice (N= 240 in each group).

S.No	Area	Mean	S.D	t- value	Level of Significance
1	Rural	3.69	1.41	1.1	Not Significant
	Urban	3.58	1.58		
2	Rural	3.69	1.41	2.5	0.05
	Semi - Urban	4.94	1.82		
3	Semi - Urban	4.94	1.82	2.57	0.05
	Urban	3.58	1.58		

Table 7. Comparison of rural, semi - urban and urban students on lack of job awareness and change in performance (N= 240 in each group).

S.No	Area	Mean	S.D	t- value	Level of Significance
1	Rural	2.46	1.04	0.88	Not Significant
	Urban	2.38	1.19		
2	Rural	2.46	1.04	2.8	.001
	Semi - Urban	4.74	1.21		
3	Semi - Urban	4.74	1.21	3.6	0.01
	Urban	3.38	1.19		

A quick look at Table 6 reveals that all the three groups i.e., rural students v/s urban students, urban students v/s semi- urban students and semi - urban v/s urban students, two comparison turned out to be significant at (0.01) level.

The results reveal that all the three comparisons turned out to be significant at (0.01) level. On the basis of mean score it has been found that rural students in comparison to urban students show higher attitude towards the indecisiveness in vocational choice.

The results in Table 7 reveal that the mean difference between rural students and urban students is not

significant, as our calculated values (1,1) is less than the tabulated t - value at 0.05 is 0.01 level of significance. The results classify that the two groups have similar attitude towards vocational understanding.

The result in Table 8 reveals that out of three comparisons two comparisons turned out to be significant at (0.01 and 0.05) level.

The result in Table 9 reveals that out of three comparisons, two comparisons turned out to be significant at (0.05 and 0.01) levels. It has been found that the mean difference between rural students and urban students is not significant, as the calculated value (0.66)

Table 8. Comparison of rural, semi - urban and urban students on indecisiveness in Vocational choice (N= 240 in each group).

S.No	Area	Mean	S.D	t- value	Level of Significance
1	Rural	5.11	2.04	19.2	0.01
	Urban	2.61	1.47		
2	Rural	5.11	2.04	3.71	0.01
	Semi - Urban	4.59	1.89		
3	Semi - Urban	4.59	1.89	15.23	0.01
	Urban	2.61	1.47		

Table 9. Comparison of rural, semi - urban and urban student Vocational Understanding (N= 240 in each group).

S.No	Area	Mean	S.D	t- value	Level of Significance
1	Rural	2.26	1.16	1.1	Not Significant
	Urban	2.37	1.25		
2	Rural	2.26	1.16	3.4	.001
	Semi - Urban	2.60	1.20		
3	Semi - Urban	2.60	1.20	2.3	0.05
	Urban	2.37	1.25		

is less than the tabulated t - value at (0.05 and 0.01) level of significance.

Conclusion

On the basis of statistical analysis and also in the light of empirical evidence, the following conclusions have been drawn:

1. During the area - wise analysis the results reveal that rural, urban and semi – urban students have shown almost same attitude towards vocational maturity.
2. The area - wise mean difference has shown that no difference was found in the mean scores of rural and urban students.
3. The semi - urban students showed better attitude towards vocational maturity than rural and urban students.
4. Using the dimension - wise significance of mean difference, it has been found that rural and urban, and rural and semi - urban students differ significantly from each other on 1st dimension of vocational attitude maturity vocational aspiration level

Whereas semi - urban and urban students are same on vocational aspiration level. Semi -urban students show

higher mean score as compared to rural and urban students. It has also be found that all the three groups i.e., rural and urban, rural and semi - urban and semi - urban differ significantly from each other on influence and money in job choice.

2nd Dimension of vocational attitude maturity and on indecisiveness on vocational choice, 5th dimension of vocational attitude maturity.

The results also reveal that rural and urban students are same on altruism and passivity in job choice, lack of job awareness and change in performance and on vocational understanding choice. It has also been found that rural and urban and semi - urban and urban students differ significantly from each other on lack of independence. While as rural and semi - urban students are same on lack of independence and show no difference of significance.

Educational Implications

1. There is need to provide vocational counseling at secondary level so as to develop vocational maturity among students.
2. There is need to re - organize educational curriculum at secondary level and make it job oriented.

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Family Interaction Patterns, Career Planning Attitudes, and Vocational Identity of High School Adolescents

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The purpose of the current study was to examine how perceptions of family interaction patterns as defined along three dimensions of family environment (quality of family relationships, family goal-orientations, and degree of organization and control within the family system) predict vocational identity and career planning attitudes among male and female adolescents living at home. One hundred twenty three high school students completed measures of family environment, vocational identity, and career planning attitudes. Analyses revealed that the quality of family relationships (i.e., degree to which family members are encouraged to express feelings and problems) played a small, yet significant role in predicting career planning attitudes of adolescents.

KEY WORDS: adolescents; family patterns; career planning; vocational identity.

Career counselors and theorists have long acknowledged the role of the family context in the career development literature (e.g., Hagen, 1960; Herr & Lear, 1984; Peluchette, 1993). The family systems

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approach to career development proposes that the ability to explore and consider career options and make appropriate vocational decisions for a young individual may be directly influenced by the quality of family interactions, boundaries, and emotional interdependencies perpetuated within the family (Brachter, 1982; Lopez & Andrews, 1987; Zingaro, 1983). The prominent role of family dynamics has even surfaced in a small number of career counseling and educational intervention guidelines in the career literature (e.g., Bradley, 1984; Bradley & Mims, 1992; Moon, Coleman, McCollum, Nelson, & Jensen-Scott, 1993; Morrow, 1995; Okiishi, 1987). Despite the widely held theoretical assumptions emphasizing the critical role of the family in career development theory and practice, and some recent research focusing on family variables (e.g., Blustein, Walbridge, Friedlander, & Palladino, 1991; Johnson, Buboltz, & Nichols, 1999), the exact nature of the family influence on career development patterns continues to be empirically elusive and inconsistent (Brachter, 1982; Eigen, Hartman, & Hartman, 1987; Guerra & Braungart-Rieker, 1999; Hargrove, Creagh, & Burgess, 2002; Johnson et al., 1999; Larson & Wilson, 1998; Lopez & Andrews, 1987; Zingaro, 1983).

Some possible reasons for inconsistent findings may be due to differences in operationalizing of constructs and thus the use of diverse family measures across studies. For example, some family-career studies have operationalized family-related variables using birth order and family configuration measures (Leong, Hartung, Goh, & Gaylor, 2001); others have used measures of attachment (Blustein et al., 1991; Blustein, Prezioso, & Schultheiss, 1995; Felsman & Blustein, 1999; Ryan, Solberg, & Brown, 1996). Kinnier, Brigman, and Noble (1990) used measures based on Bowen's intergenerational systems model; and still others have used the two-dimensional circumplex model of family functioning (e.g., Eigen et al., 1987). Thus, there has been very little systemic research using identical or multi-dimensional measures of family functioning.

Some recent studies (Hargrove et al., 2002; Johnson et al., 1999; Whiston, 1996) have been promising in that they have brought about some consistency in operationalization of family functioning by utilizing Moos' (1989) multidimensional Family Environment Scale as a measure of family interaction patterns in relation to career outcomes with college students. Specifically, Whiston (1996) examined the interrelationships between family interaction patterns (as measured by three dimensions of the Family Environment Scale: relationship, personal growth and system maintenance), career

indecision and career decision-making self-efficacy beliefs among male and female college students. Support was found for the hypothesized relations between career decision-making self-efficacy (i.e., ability to make realistic choices, crystallization of career choice using occupational information) and the Personal Growth Dimension (i.e., family-supported goals emphasizing intellectual/cultural pursuits). No support was found for the hypothesized relationships between career indecision and the Relationship Dimension (e.g., degree of cohesion, conflict, and open expression) and between career decision-making self-efficacy and the System Maintenance Dimension. The Whiston (1996) study however, did reveal a number of unexpected results. First, career indecision related inversely to the System Maintenance Dimension for women alone. Second, there were inverse relations between two Personal Growth Dimension factors (independence and achievement orientations) and self-efficacy in using occupational information. While Whiston (1996) concluded that there was some support for the link between family dimensions and career indecision and career decision-making self-efficacy, additional research is needed to clarify the surprising and inconsistent results.

Johnson et al. (1999) also used Moos' (1989) Family Environment Scale with college students. They examined relations between the family relationships dimension (i.e., degree of conflict, cohesion, and expressiveness), parental marital status and college students' vocational identity. Although Johnson et al. (1999) reported small direct (cohesion, expressiveness) and inverse relations (conflict) to vocational identity, only expressiveness accounted for unique variance in vocational identity scores (3%). It is uncertain if other aspects of family functioning may be related to vocational identity beyond the quality of family relationships.

Finally, using all three family dimensions (e.g., quality of family relationships, family-supported goal orientations, and degree of control and organization), Hargrove et al. (2002) explored the relations among family-of-origin patterns, vocational identity and career decision-making self-efficacy. Using a sample of 210 college students, significant variance was accounted for in vocational identity scores by one family-supported goal—achievement orientation. Results also showed a significant relationship between career decision-making self-efficacy scores, three family-supported goals (achievement, intellectual-cultural, moral-religious emphasis orientations), and degree of family conflict and expressiveness. The authors concluded that

perceptions of family relationships and goal orientations may play small, yet significant roles in the formulation of clear and stable career goals and the promotion of self-confidence in regard to completing career planning activities. However, all three studies used a sample consisting primarily of traditional college-aged (18–24 years old) students. While research continues to suggest the possible link between perceptions of family environment and various vocational outcomes among college students, the exact nature of the family-career link as perceived by other samples such as adolescents continues to remain unclear.

For example, Penick and Jepsen (1992) examined the role of family relationships and system maintenance factors, beyond achievement, gender, and socioeconomic status, in the prediction of adolescent vocational identity and career planning scores. Family relationship factors were operationalized as cohesion, expressiveness, conflict, sociability, idealization, and disengagement subscales. Family system maintenance factors were operationalized as organization, locus-of-control, democratic family style, authoritarian family style, laissez-faire family style, and enmeshment. Using a sample of eleventh graders, Penick and Jepsen (1992) found that family system maintenance variables (democratic and authoritarian family styles and enmeshment) and to a lesser extent, expressiveness (positive) and conflict (negative) were significant predictors of vocational identity. In contrast, [Eigen et al. \(1987\)](#) found no empirical support for a relation between family interactions patterns (operationalized along two dimensions family cohesion and adaptability) and career indecision among high school students. The disparity between measures of family functioning or the unique characteristics of the samples may help to explain the inconsistent findings.

The National Career Development Guidelines (NOICC, 1992) suggested that high school adolescents need to become more self-knowledgeable, understand the connection between educational achievement and career planning, and develop solid career planning and decision-making skills. Furthermore, career development interventions should help adolescents particularly in high school address the array of internal and environmental pressures many students experience in making career decisions (Herr & Cramer, 1997). Thus, adolescents may perceive the family environment as an environmental pressure or support when engaging in career planning and exploration. Therefore, the purpose of our study was to further explore the possible interrelations between family

interaction patterns and career planning for male and female adolescents living at home.

Consistent with recent empirical studies (e.g., Hargrove et al., 2002; Johnson et al., 1999; Whiston, 1996), we used the multi-dimensional Family Environment Scale to measure perceptions of the quality of family relationships, family-supported goals, and degree of family control and structure. Although Johnson et al. (1999) used only the family relationships dimension and vocational identity among college students, we decided to be more consistent with the Hargrove et al. (2002) and Whiston (1996) studies, by exploring the link between all three family dimensions on The Family Environment Scale, and career development variables.

We also examined the relation between vocational identity and dimensions of family environment in order to be consistent with previous research with college students (Hargrove et al., 2002; Johnson et al., 1999; Lopez, 1989) and adolescents (Penick & Jepsen, 1992). For instance, Lopez (1989) tested a model predicting college students' vocational identity scores using trait anxiety, academic adjustment, and family variables marital conflict, conflictual-independence (or degree to which students reported freedom from excessive guilt, resentment, and anger in the relationships with both parents) and emotional independence (or degree of freedom from excessive needs for parental approval, closeness, or emotional support). Lopez (1989) reported that conflictual independence from opposite-sex parent was the most potent family-related predictor of vocational identity scores for both male and female college students, beyond trait anxiety and academic adjustment, further supporting the importance of parent-young adult conflict in young adult career development (Brachter, 1982; Lopez & Andrews, 1987; Zingaro, 1983).

Finally, in addition to the formation of a strong vocational identity, we also examined career planning attitudes for adolescents based on the National Career Development Guidelines (NOICC, 1992) and their emphasis on accurate self-knowledge, educational and occupational exploration, career planning, and workforce readiness. Thus, our exploratory study examined the extent to which family-of-origin interaction patterns would predict the vocational identity scores and career planning attitudes of high school adolescents.

Method

Participants and Procedure

The participants in this study consisted of 123 high school students selected from class rosters from six Humanities classes and two open study classrooms. The participants were drawn from grades 9 through 12 at a high school located in a small, rural town in northeastern Pennsylvania. The sample consisted of 48 males and 75 females. Of these, 55% were 9th graders, 10% were 10th graders, 18% were 11th graders, 17% were 12th graders. The mean age was 15.79 ($SD = 1.3$) with a range of 14–18 years. Approximately 93% self-identified as Caucasian, 1% as Native American or Alaskan, 1% as Asian or Pacific Islander, 1% as biracial, and 4% as other. In terms of family living arrangement, 72% lived with both biological parents, 11% lived with a biological mother and stepfather, 2% lived with a biological father and stepmother, 11% were from a single parent home, 2% lived in an adoptive family structure, and 2% did not respond.

The superintendent, Director of Curriculum and Instruction, the principal and guidance counselors were notified of the proposed study and permission was sought to conduct the study at the high school. The principal was supplied with letters to be given to parents for consent of their child's participation. An Art Instructor who assisted in the research gave the students a parental consent form to be signed by parents of student's under the age of 18. The students were informed that they would have a week to return the signed parental permission form. Once parental permission was obtained, students signed an assent form that outlined the procedures and goals of the research. In the classroom, the graduate student researcher and the high school Art Instructor provided the volunteer participants a separate letter of interest, a description of the study, as well as privacy protection information. Participants were informed of the volunteer nature of the study and informed that they could withdraw from participation at any time without consequences. Questions were read aloud to the students by the art instruction for each measure to ensure completion of the assessment materials in the 50 min class period. In order to maintain confidentiality, students were asked to return the completed material in the envelope provided to the Art Instructor who in turn placed them in a collection box given to the primary researcher.

Measures

The Family Environment Scale-Form R (FES-Form R; Moos, 1989)

The FES-Form R is a 90-item, self-report questionnaire used to assess an individual's perceptions of the social climate in the family-of-origin along three dimensions: Relationship, Personal Growth, and System Maintenance. The Relationship Dimension assesses the degree to which family members are perceived to be involved with each other and how openly positive and negative feelings are expressed. The Relationship Dimension consists of three subscales: Cohesion (degree of perceived commitment, support, and help family members provide for each other), Expressiveness (degree to which family members are encouraged to express feelings and problems), and Conflict (amount of openly expressed anger, aggression, and conflict among family members).

The Personal Growth Dimension reflects the family-of-origin's goal orientation or ways the family-of-origin encourages or inhibits an individual's personal growth. The Personal Growth Dimension is made up of the following five scales: Independence (extent to which family members are assertive, make own decisions, and self-sufficient); Achievement Orientation (extent to which school and work activities are cast as indices of achievement or areas of competition); Intellectual-Cultural Orientation (degree to which family members showed interest in political, social, intellectual, and cultural activities); Active-Recreational Orientation (extent to which family members emphasized participation in social and recreational activities); and Moral-Religious Emphasis (extent to which family members emphasized ethical and religious issues and values). Finally, the System Maintenance Dimensions reflect the degree to which the family emphasizes clear organization, control, structure, rules, and procedures in running family life. The System Maintenance Dimensions consists of two subscales: Organization (extent to which the family endorses clear organization and structure in planning family activities and responsibilities) and Control (extent to which rules and procedures are followed and enforced by family members). The Relationship and System Maintenance dimensions reflect more perceived internal family functioning, whereas the Personal Growth (or goal orientation) dimension reflects the link between the family and society.

Using a true-false dichotomous scale, participants were asked to provide their self-perceptions of their family by indicating the degree to which each statement was either true (or mostly true) or False (or

mostly false) of the family environment. Total scores for each subscale were obtained by adding each item value in the respective subscale. Total subscale scores ranged from 0 to 9, and from 0 to 90 for the entire measure. Higher scores indicated a higher degree of the perceived phenomena in the participants' family-of-origin. Internal consistency has been reported to range from .69 to .78 and test-retest coefficients have ranged from .68 to .86 for the FES subscales (Moos, 1989). In the present study, an internal consistency estimate of .78 was observed for the total scale. In addition there is adequate evidence of the convergent and discriminant validity of the FES (Persosa & Persosa, 1990).

Vocational Identity Scale (VIS; Holland, Daiger, & Power, 1980)

The VIS measures the "possession of a clear and stable picture of one's goals, interests, and talents" (Holland, Johnston, & Asama, 1993). The VIS contains 18 items to which individuals respond as "true" or "false." The level of vocational identity is determined by the total number of "false" responses. Total scores may range from 0 to 18, with higher scores indicating a greater degree of vocational identity. Sample items include "I am uncertain about the occupations I could perform well", and "I am not sure of myself in many areas of life". The VIS has high internal consistency, with reliabilities ranging from .86 to .89 for high school, college students, and worker samples (Holland et al., 1993). In the present study, an internal consistency estimate of .88 was observed. Holland et al. (1993) provided adequate convergent and discriminant validity estimates for the VIS.

Career Planning Attitudes (Career Development Inventory; Thompson, Lindeman, Super, Jordaan, & Myers, 1984)

The Career Development Inventory is a 5-dimension career development or maturity inventory designed specifically for 8th–12th graders. For the purposes of the present study, we selected the Career Planning attitudinal scale as a measure of career development based on the NOICC's (1992) guidelines for high school adolescents. Career Planning (CP) is an attitude scale consisting of 20 self-report items designed to assess the degree of engagement in career planning activities (e.g., talking about career plans with adults; getting part-time or summer jobs; entering the workforce after graduation) and overall self-ratings of attitudes toward making career plans. Items are scored using a 5-point Likert scale using letters instead of numbers. The scale ranges from A ("I have not yet given any thought to this") to E ("I have made definite plans, and know what to do to carry them

out.”). Each letter is given a number value; that is, item responses are scored from 1(A) to 5(E) and the total score is yielded from the sum of all 20 items. Thus, total scores may range from 20 to 100 points, with high scores indicating a curiosity about careers, a readiness to looking ahead, and attempts at making tentative plans. Internal consistencies for the CP Scale have ranged from .89 to .93 in previous studies (Graef, Wells, Hyland, & Muchinsky, 1985; Kuhlman-Harrison & Meely, 1980; Nevill & Super, 1988; Selfert, 1991; Thompson et al., 1984; Ward, 1982). Concurrent validity, correlating scores on the CP Scale to relevant external variables have been assessed in numerous studies. Specifically, Savickas (1984) found the CP scale to correlate significantly to two time perspective measures (.50 & .38). Similarly, a study done by Wallace-Broschious, Serafica, and Osipow (1994) showed CP to directly relate to identity achievement and inversely to moratorium and diffuse identity statuses. Finally, discriminant validity using a group differences approach has shown girls (106.46) to out score boys (100.74) on the CP Scale (Wallace-Broschious et al., 1994).

Demographic Information Sheet

Students completed an 8-item demographic questionnaire that assessed their age, gender, ethnicity, religious affiliation, socioeconomic status, residency status, academic major, and year in school.

Results

Table 1 presents the preliminary descriptive statistics (means, standard deviations and range) for the family dimension variables and two vocational measures across males, females, and the total sample. A one-way MANOVA computed to examine potential sex differences on measures of vocational identity, career planning, and the dimensions on the family environment scale was significant; Pillai's Trace = .19, $F(5, 113) = 2.16, p < .05$. Specifically, female adolescents scored higher than male adolescents on perceptions of family expressiveness, $F(1, 117) = 3.81, p < .05$; family emphasis on intellectual-cultural activities, $F(1, 117) = 11.92, p < .001$; and moral-religious values, $F(1, 117) = 8.11, p < .01$. In addition, female adolescents ($M = 70.30$; $SD = 15.93$) scored higher than male adolescents ($M = 63.54$; $SD = 17.11$) on career planning attitudes, $F(1, 117) = 3.93, p < .05$. No gender differences were found on vocational identity scores, $F(1, 117) = 1.45, p > .05$.

Table 1
Means and Standard Deviations for Male and Female Adolescents for All Measures

	Males			Females			Total Sample		
	M	SD	R	M	SD	R	M	SD	R
Relationship dimension	14.17	3.31	8-24	15.43	2.59	9-21	14.95	2.94	8-24
Cohesion	6.33	2.11	1-9	6.57	2.36	1-9	6.48	2.26	1-9
Expressiveness	4.48	2.22	1-13	5.29	1.92	1-9	4.98	2.06	1-13
Conflict	3.37	2.30	0-9	3.56	2.51	0-9	3.49	2.42	0-9
Personal growth dimension	27.70	5.14	14-36	30.57	5.51	15-40	29.48	5.53	14-40
Independence	6.13	1.60	3-9	6.27	1.49	2-9	6.21	1.53	2-9
Achievement orientation	6.00	1.55	2-9	5.96	1.52	2-9	5.98	1.52	2-9
Intellectual-cultural orientation	4.45	1.92	1-9	5.83	2.09	1-9	5.31	2.13	1-9
Active recreation orientation	6.20	2.05	1-9	6.49	1.91	2-9	6.38	1.96	1-9
Moral religious orientation	4.91	2.15	1-9	6.03	2.03	1-9	5.60	2.14	1-9
System maintenance dimension	11.30	2.71	4-16	10.76	2.91	3-16	10.97	2.84	3-16

Table 1
(Continued)

	<i>Males</i>			<i>Females</i>			<i>Total Sample</i>		
	<i>M</i>	<i>SD</i>	<i>R</i>	<i>M</i>	<i>SD</i>	<i>R</i>	<i>M</i>	<i>SD</i>	<i>R</i>
Organization	6.08	1.52	2-9	5.78	1.92	1-9	5.90	1.78	1-9
Control	5.22	1.91	1-9	4.97	2.04	0-9	5.06	1.99	0-9
Vocational identity	10.20	4.51	0-18	11.26	4.33	2-18	10.97	2.83	0-18
Career planning	63.54	17.11	26-97	70.30	15.93	28-100	67.64	16.67	26-100

Note. Male ($n = 46$); Female ($n = 75$); M = Mean; SD = Standard Deviation; R = Range.

Several multiple linear regressions were computed to predict adolescents' vocational identity scores and career planning attitude scores based on the three family environment dimension scores (Table 2). Results showed that the regression equation for vocational identity was not significant ($F(3, 116) = .559, p > .05$), with an R^2 of .01. Thus, based on this particular sample, family interaction patterns cannot be used to predict vocational identity for adolescents. However, a multiple linear regression computed to predict adolescents' career planning attitudes based on family environment dimension scores showed significance ($F(3, 116) = 2.92, p < .05$) with an R^2 of .07. Specifically, the Relationship Dimension ($\beta = .20, p < .05$) was significantly predictive of career planning attitudes. When each of the Relationship Dimension sub-factors were regressed onto career planning attitudes ($F(3, 116) = 2.46, p = .06$), degree of expressiveness in the family was significantly and positively related to career planning attitudes ($\beta = .22, p < .05$).

Discussion

The purpose of the current study was to examine how perceptions of family interaction patterns as defined along three dimensions of

Table 2
Summary of Multiple Regression Analysis Assessing the Unique Family Environment Predictors of Vocational Identity and Career Planning of High School Adolescents

	β	R	R^2	F
Vocational identity model		.12	.01	0.56
RD	.07			
PGD	.08			
SMD	.00			
Career planning model		.26	.07	2.92*
RD	.20*			
PGD	.12			
SMD	.03			

Note. RD = Relationship Dimension; PGD = Personal Growth Dimension; SMD = System Maintenance Dimension; * $p < .05$.

family environment (quality of family relationships, family goal-orientations, and degree of organization and control within the family system) might predict vocational identity and career planning attitudes among male and female adolescents living at home. Analyses revealed that the perceived quality of family relationships (i.e., degree to which family members are encouraged to express feelings and problems) played a small, yet significant role in predicting career planning attitudes of adolescents.

With regard to gender differences, female adolescents perceived their families (1) to have more frequent expression of anger, aggression and conflict, (2) to express more interest in political, social, intellectual, and cultural activities, and (3) to have more emphasis on religious issues and values than male adolescents. Interestingly, female adolescents also indicated that they had engaged in more career planning activities (e.g., talking about career plans with adults; getting part-time or summer jobs; entering the workforce after graduation) as compared to their male counterparts.

Consistent with previous studies (e.g., [Hargrove et al., 2002](#); [Johnson et al., 1999](#); [Whiston, 1996](#)), the perceived quality of relationships factors (i.e., degree to which family members are encouraged to express feelings and problems) was related to a career development variable—career planning activities. The present results lend some empirical support to the theoretical role of how internalized family messages (i.e., openly discuss problems and feelings) can be directly related to an adolescent's degree of curiosity about careers and attempts at making tentative future career plans ([Brachter, 1982](#); [Lopez & Andrews, 1987](#); [Zingaro, 1983](#)).

However, the exploratory multiple regression analysis revealed that perceptions of family environment were not related to vocational identity for adolescents. The lack of an empirical relation between vocational identity and family relationship factors (specifically conflict, cohesion, or expressiveness) is inconsistent with previous research studies with college students ([Johnson et al., 1999](#); [Lopez, 1989](#)) and adolescents ([Penick & Jepsen, 1992](#)). It may appear that the construct of vocational identity has less practical significance for the career development stage for adolescents. Also, these results may be reflective of the particular sample used in the current study (i.e., 9th–12th graders from a rural setting).

Furthermore, results did not reveal any relationships among other dimensions beyond the quality of family relationships and career

outcomes. Surprisingly, perceptions of family-supported goals (i.e., extent to which family members emphasized participation in social and recreational activities) were not related to adolescent vocational identity scores or career planning attitudes. This finding is inconsistent with previous research with college students (e.g., [Hargrove et al., 2002](#); [Whiston, 1996](#)).

Finally, the present results also revealed that none of the family system maintenance dimension factors were significant predictors for career development outcomes. This finding seems to be consistent with the study conducted by [Hargrove et al. \(2002\)](#), but inconsistent with other previous research (e.g., [Penick & Jepsen, 1992](#); [Whiston, 1996](#)). Thus, it is possible that perceptions of family factors in terms of the degree of organization and control in the family may not play an important role in some career outcomes for adolescents. Furthermore, these results suggest that the degree of relationship between perceptions of family functioning may vary for adolescents versus college students.

Overall, this quantitative, correlational study provided mixed results regarding the presence of significant relations between career development variables and family environment factors. It is possible that the inconsistencies in the literature and the current study may be a function of other moderating variables (e.g., ethnicity, rural/urban settings) or the methodology. Future research needs to continue to clarify the role of quality of family relationships and family-supported goals in the career development of adolescents living at home versus young adults. Studies should focus on sampling adolescents at different grade levels, at-risk adolescents, and members from more diverse communities. Finally, future research may need to use alternative research methodologies (e.g., case studies, qualitative methods, mixed designs) to further clarify these subtle and mixed family-career relationships found mostly using group, quantitative designs.

The present study has a number of limitations therefore these results should be interpreted with some caution. First, the study was limited by a reliance on self-reports to accurately reflect family-of-origin interaction patterns. Second, the correlational design of the study does not allow cause-and-effect statements to be made. Finally, consistent with previous studies, majority of the sample represented predominantly White, adolescents attending a public high school in a rural area in the northeast. Despite these limitations, preliminary findings in the current study provide some evidence in supporting the

role of family variables in career decision-making. We encourage counselors to continue to consider and explore how their clients' perceptions of their family-of-origin relationships may color their clients' career planning activities and decisions.

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